

SERVICE MANUAL

BX1 CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
KV-21CL5K	RM-W100	OIRT	SCC-U92G-A				



TRINITRON® COLOR TV
SONY®

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INSTRUCTION MANUAL

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS, THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED \triangle ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE \triangle SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

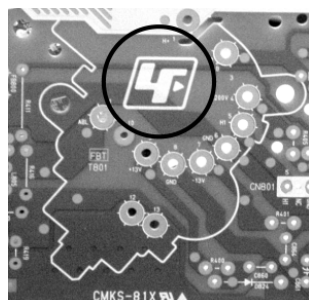
CAUTION**Lead Free Soldered Boards**

The circuit boards listed below (Table 1) may have been processed using Lead Free Solder. The boards are identified by the LF logo . e.g A,C board (see example).

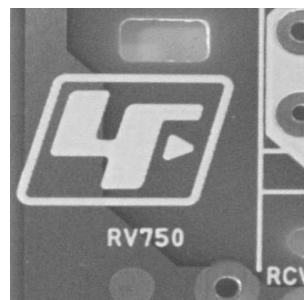
Board	Function
A	ONE CHIP PROCESSOR, DEFLECTION, POWER SUPPLY, AUDIO, TUNER, IF, JACK, SCART TERMINAL
C	RGB AMP

(Table 1)

example 1 (A Board)




example 2 (C Board)



The servicing of these boards requires special precautions to be taken as outlined below:

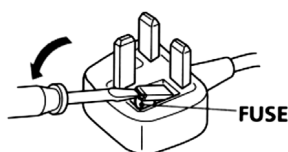
1. It is strongly recommended to use Sony Approved Lead Free Solder material in order to guarantee optimal quality of new solder joints.
2. Due to higher melting point of Lead Free Solder, the soldering iron tip temperature needs to be set to chip (350 degree centigrade) and lead component (380 degree centigrade) for not more than 4 seconds. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.

WARNING
(FOR EUROPE MODEL WITH “U” (UK) ONLY)

The flexible mains lead is supplied to connected a B.S. 1363 fused plug having a fuse of 5 AMP rating. Should the fuse need to be replaced, use a 5 AMP FUSE approved by ASTA to BS 1362, i.e one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with a 5 AMP FUSE, otherwise the circuit should be protected by a 5 AMP FUSE at the distribution board.



How to replace the fuse?
Open the fuse compartment with a screw driver blade and replace the fuse.

SELF DIAGNOSTIC FUNCTION

The units in this manual contain a self diagnostic function. If an error occurs, the STANDBY (⏻) indicator will automatically begin to flash. A description of the self-diagnosis function is explained in the instruction manual. The number of times the STANDBY (⏻) indicator flashes translates to a probable source of the problem. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSTIC TEST INDICATORS

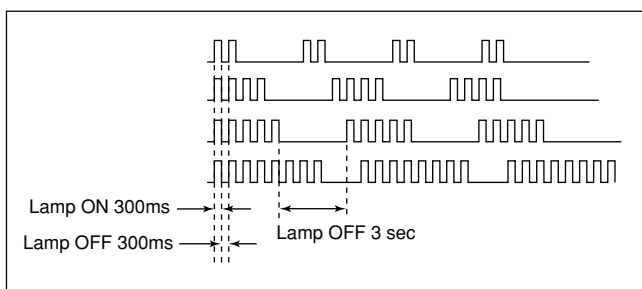
When an errors occurs, the STANDBY (⏻) indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

Result for all of the following diagnosis items are displayed on screen. No error has occurred if the screen displays a "0".

Diagnosis Item Description	No. of timer STANDBY (⏻) indicator flashes	Self-Diagnostic display/ Diagnosis result	Probable Cause Location	Detected Symptoms
Power does not turn on	Does not light	–	<ul style="list-style-type: none"> Power cord is not plugged in. Fuse is burned out (F600) A board. 	<ul style="list-style-type: none"> Power does not come on. No power is supplied on TV. AC Power supply is faulty.
+B overcurrent (OCP)*	2 times	2:0 or 2:1 ~ 255	<ul style="list-style-type: none"> H OUT (Q805) is shorted. (A board) IC751 is shorted. (C board) 	<ul style="list-style-type: none"> Power does not come on. Load on power line is shorted.
V-Protect	4 times	4:0 or 4:1 ~ 255	<ul style="list-style-type: none"> +13V is not supplied. (A board) IC804 is faulty. (A board) 	<ul style="list-style-type: none"> Has entered standby state after horizontal raster. Vertical deflection pulse is stopped. Power line is shorted or power supply is shorted.
IK (AKB)	5 times	5:0 or 5:1 ~ 255	<ul style="list-style-type: none"> Video OUT (IC1545) is faulty. (A board) IC001 is faulty. (A board) Screen (G2) is improperly adjusted.** 	<ul style="list-style-type: none"> No raster is generated. CRT Cathode current detection reference pulse output is small.
HV Protect	8 times	8:0 or 8:1 ~ 255	<ul style="list-style-type: none"> IC604 faulty. IC602 faulty. 	<ul style="list-style-type: none"> No power supply to CRT ANODE. No RASTER is generated.

* If a +B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously. The symptom that is diagnosed first by the mirco controller is displayed on the screen.

** Refer to Screen (G2) Adjustment in this manual.

2. DISPLAY OF STANDBY (⏻) INDICATOR**FLASH COUNT****Diagnostic Item****Flash Count***

+B overcurrent	2 times
V-Protect	4 times
IK (AKB)	5 times
HV Protect	8 times

* One flash count is not used for self-diagnosis.



STANDBY ⏻ indicator

3. STOPPING THE STANDBY (⏻) INDICATOR FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY (⏻) indicator from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as "power sometimes shuts off" or "screen sometimes goes off" that cannot be confirmed, it is possible to bring up past occurrences of failure on the screen for confirmation.

[To Bring Up Screen Test]

In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Display ➡ Channel ➡ Volume ➡ Power / TV



Note that this differs from entering the service mode (volume).

The following screen will be displayed indicating the error count.

ERROR MENU	
2 :	0
3 :	N/A
4 :	0
5 :	1
8 :	0
101 :	N/A

Numeral "0" means that no fault was detected.

Numeral "1" means the number of a fault occurrence (1 ~ 255).

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to "0".

Unless the result display is cleared to "0", the self-diagnosis function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

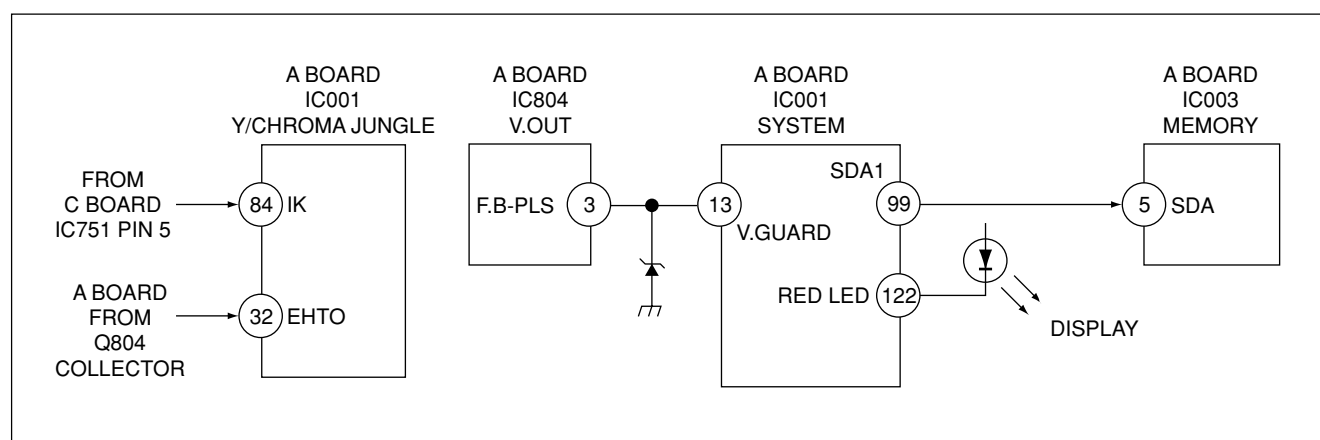
To clear the result display to "0", press buttons on the remote commander subsequent as shown below when the self-diagnostic screen is being displayed.

[8] → [0]

[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



[+B overcurrent (OCP)]

Occurs when an overcurrent on the +B(135V) line is detected by pin 32 of IC001 (A board). If the voltage of pin 32 of IC001 (A board) is more than 4V, the unit will automatically go to standby.

[V-PROTECT]

Occurs when an absence of the vertical deflection pulse is detected by pin 13 of IC001 (A board).

[IK (AKB)]

If the RGB levels* do not balance within 15 sec after the power is turned on, this error will be detected by IC001 (A board). TV will stay on, but there will be 5 times LED blinking.

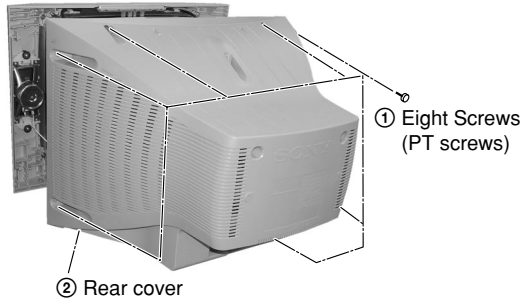
[HV PROTECT]

Occurs when IC001 internal HV protect detects an abnormal H-Pulse (frequency) due to improper power supply to IC001. TV cuts off high voltage power of anode CRT. No picture will be detected. eg: IC602, IC604 go faulty.

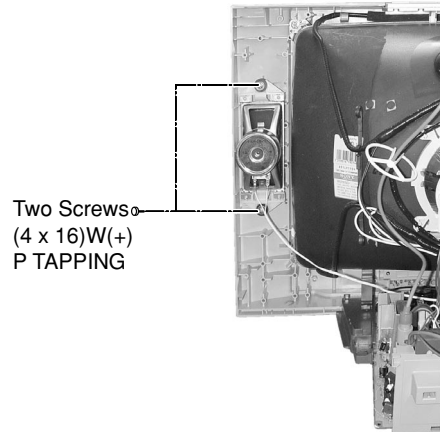
* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

SECTION 1 DISASSEMBLY

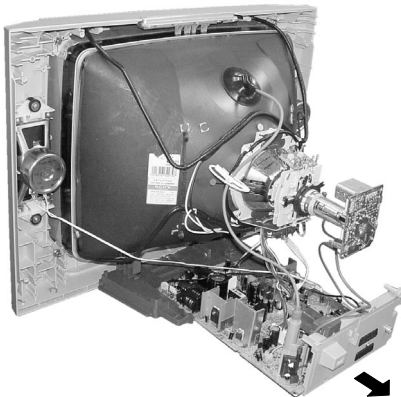
1-1. REAR COVER REMOVAL



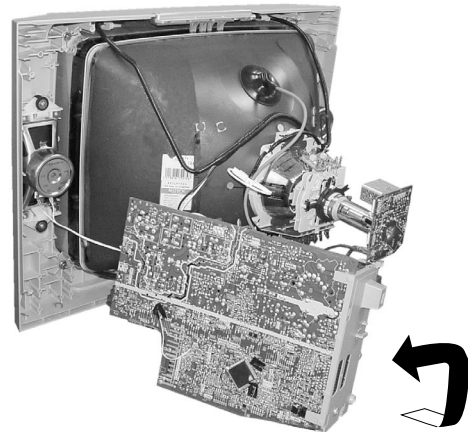
1-2. SPEAKER BLOCK ASSY REMOVAL



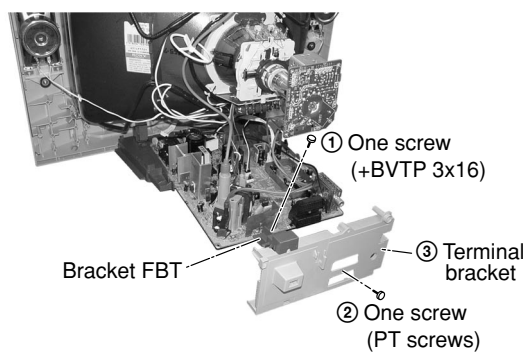
1-3. CHASSIS ASSY REMOVAL



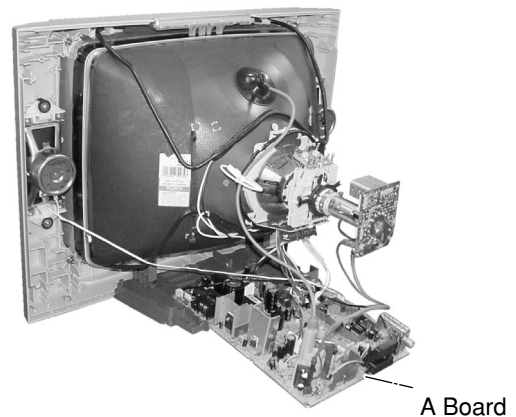
1-4. SERVICE POSITION



1-5. TERMINAL BRACKET REMOVAL



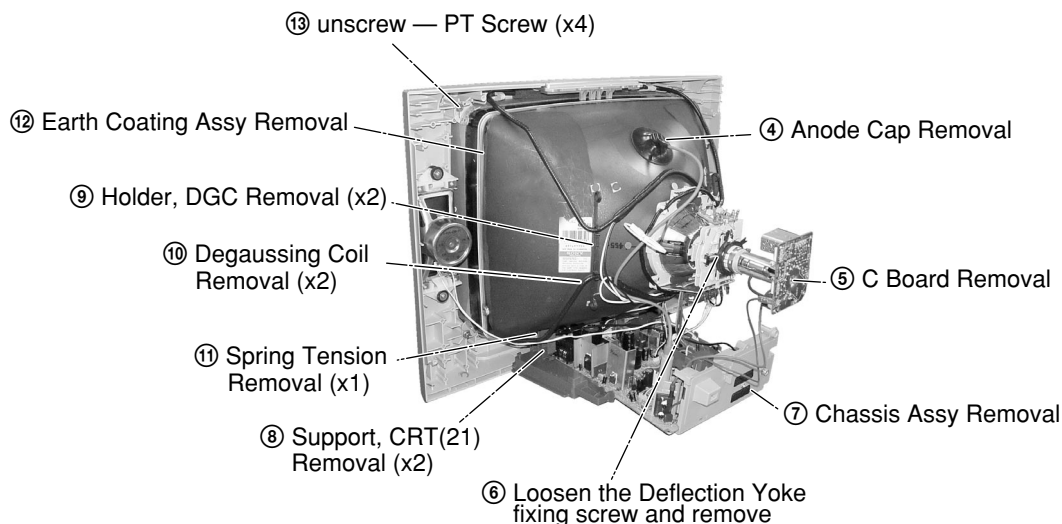
1-6. A BOARD REMOVAL



1-7. PICTURE TUBE REMOVAL

Note:

- Please make sure the TV set is not in standing position before removing necessary CRT support located on bottom right and left.
- 1) Place the TV set with the CRT face down on a cushion jig.
 - 2) Removal the rear cover.
 - 3) Unplug all interconnecting leads from the Deflection Yoke, Degaussing Coils and CRT grounding strap.

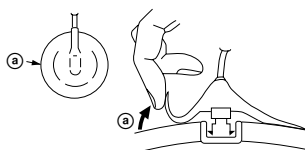


• REMOVAL OF ANODE-CAP

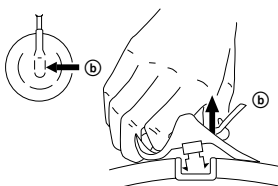
Note:

- After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

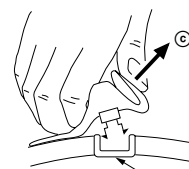
• REMOVING PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by the arrow ①.



- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.
- ③ When one side of the rubber cap is separated from

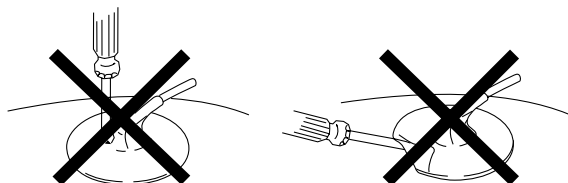


anode button

the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Do not damage the surface of anode-caps with sharp shaped objects.
- ② Do not press the rubber too hard so as not to damage the inside of anode-cap.
A metal fitting called the shatter-hook terminal is built into the rubber.
- ③ Do not turn the foot of rubber over too hard.
The shatter-hook terminal will stick out or damage the rubber.



SECTION 2 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

Set the controls as follows unless otherwise noted:

VIDEO MODE STANDARD

PICTURE CONTROL NORMAL

BRIGHTNESS CONTROL NORMAL

Perform the adjustments in the following order :

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance

Note : Test Equipment Required.

1. Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital Multimeter
5. Oscilloscope

Preparation:

In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west. Switch on the set's power and degauss with the degausser.

2-1. BEAM LANDING

Picture Mode : LIVE

1. Input a white signal with the pattern generator. Set the contrast and brightness to normal.
2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the centre and the blue and red take up equally sized areas on each side of the screen. (see figure 2-1 and figure 2-1-1)

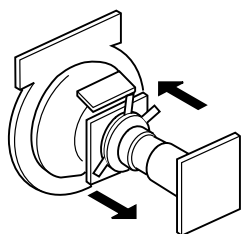


Figure 2-1

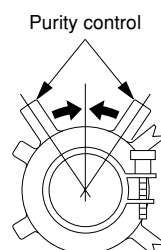


Figure 2-1-1

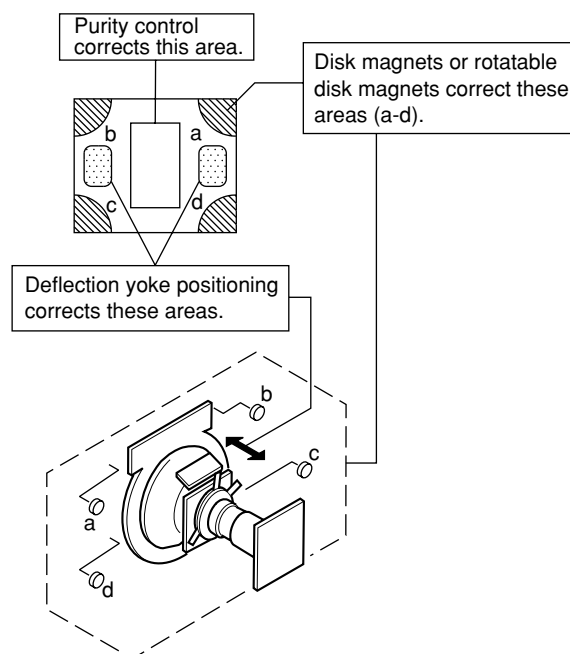


Figure 2-1-3

4. Move the deflection yoke forward and adjust so that the entire screen is green. (see figure 2-1-2)

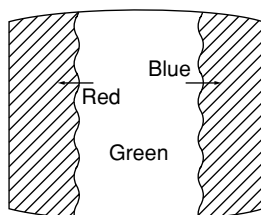


Figure 2-1-2

5. Switch the raster signal to blue, then red and verify the condition.
6. When the position of deflection yoke have been decided, fasten the deflection yoke with the screws and DY spacers.

Caution:

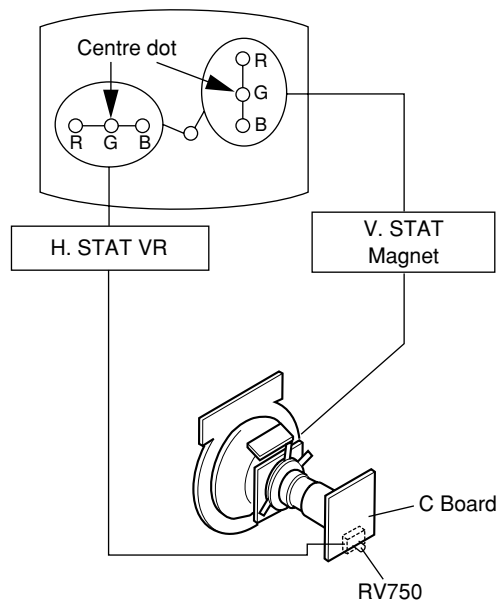
High voltages are present on the Deflection yoke terminals. Take care when handling the deflection yoke whilst carrying out adjustments.

2-2. CONVERGENCE

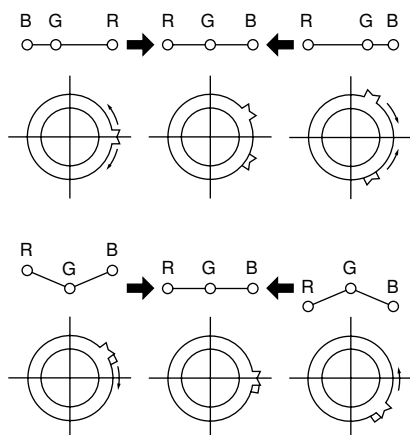
Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Picture Mode : MOVIE

(A) Horizontal and Vertical Static Convergence

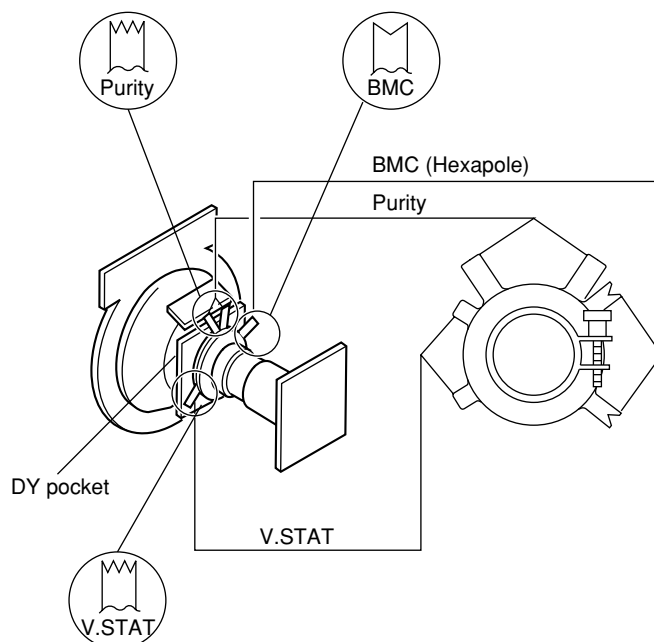


1. (Moving vertically), adjust the V. STAT magnet so that the red, green and blue dots are on top of each other at the centre of the screen.
2. (Moving horizontally), adjust the H. STAT VR control so that the red, green and blue dots are on top of each other at the centre of the screen.
3. BMC (Hexapole) Magnet
If the red, green and blue dots are not balanced or aligned then use the BMC magnet to adjust in the manner described below.



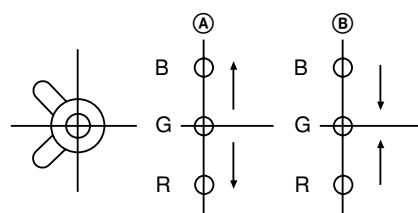
4. If the H. STAT variable resistor cannot bring the red, green and blue dots together at the centre of the screen, adjust the horizontal convergence with the H. STAT variable resistor and the V. STAT magnet in the manner given below.

(In this case, the H. STAT variable resistor and the V. STAT magnet influence each other, so be sure to perform adjustments while tracking.)

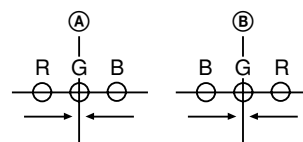


Operation of V. STAT magnet.

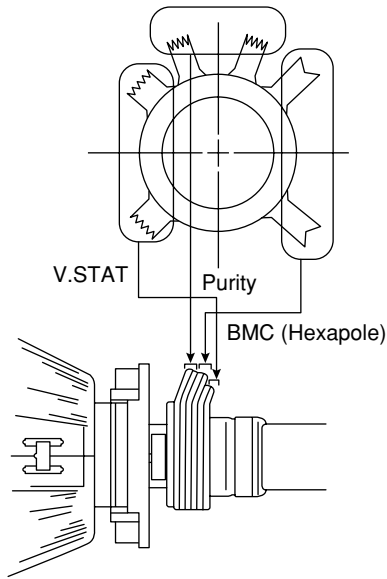
If the V. STAT is moved in the "A" and "B" arrows, the red, green and blue dots moves as shown below.



Moved RV750 H. STAT the red, green and blue dots move as shown below.



5. Layout of each control.

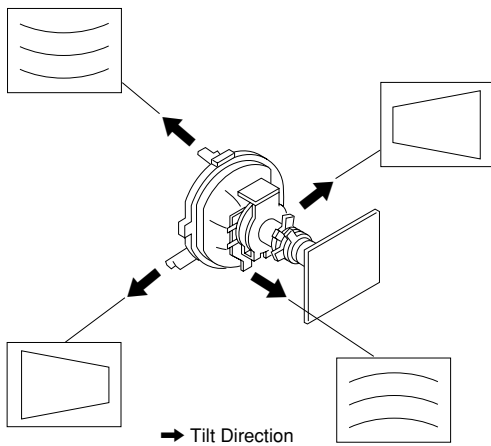


6. Geometry Adjustment.

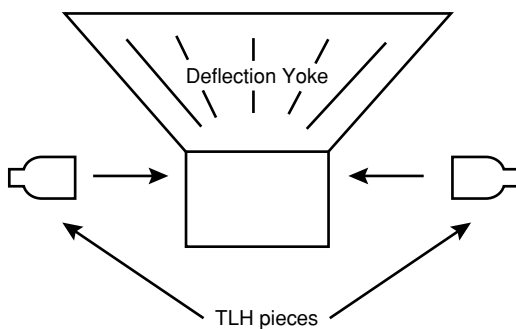
Preparation:

Before starting this adjustment, adjust the horizontal and vertical static convergence.

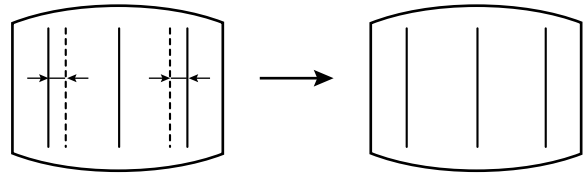
- Remove the deflection yoke spacer.
- Tilt the deflection yoke as indicated in the figure below and optimise the geometry.
Tilting the DY up and down will balance the upper and lower pin adjustment.
Tilting the DY left and right will balance the H-Trap adjustment.
- Re-install the deflection yoke spacer.



7. H-TILT Adjustment



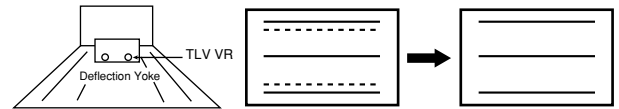
H-TILT correction can be performed by adding a TLH correction assembly to the Deflection Yoke.



8. YCH Adjustment

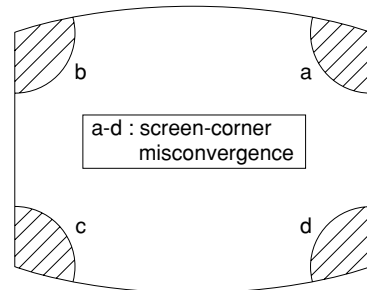


9. TLV Adjustment

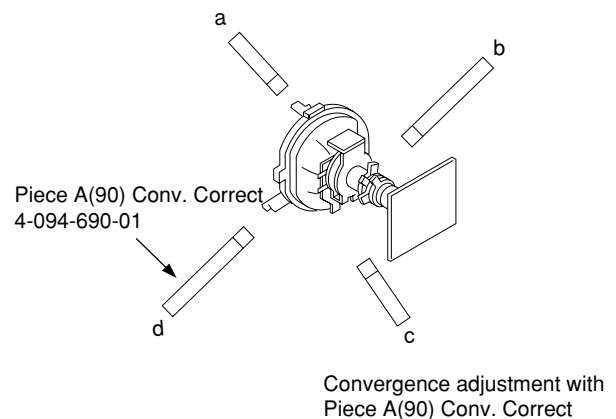


10. Screen Corner Convergence.

If you are unable to adjust the corner convergence properly, this can be corrected with the use of Piece A(90) Conv. Correct.

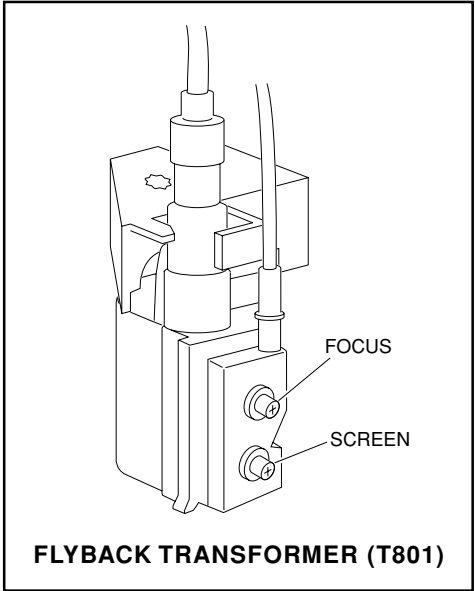


Install the Piece A(90) Conv. Correct assembly for the area that needs correcting.



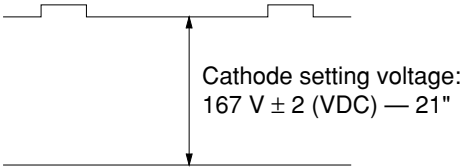
2-3. FOCUS ADJUSTMENT

- 1. Receive digital monoscope pattern.
- 2. Set Picture Mode to PERSONAL.
- 3. Adjust focus VR to obtain the best focus at the centre of the screen.
- 4. Change the receiving signal to white pattern and blue back.
- 5. Confirm magenta ring is not noticeable. In case magenta is very obvious, adjust the focus VR to take balance of magenta ring and focus.



2-4. G2(SCREEN) ADJUSTMENT

- 1. Input a dot signal from the pattern generator.
- 2. Set the Picture, Brightness and Colour to minimum.
- 3. Apply 167V DC from an external power supply to the R,G and B cathodes of the CRT.
- 4. Adjust brightness to obtain cathode value to value below.
- 5. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point just before the flyback return lines disappear.



2-5. WHITE BALANCE ADJUSTMENT

- 1. Enter into Service Menu.
- 2. Input white pattern signal.
- 3. Set picture to PERSONAL mode.
- 4. Select WHBL "RDRV" and fix the value to 25 hex.
- 5. Adjust WHBL "GDRV" and "BDRV" and adjust the data for best white balance in highlight condition.
- 6. Adjust WHBL "BKOR" and "BKOG" and adjust the data for best white balance cut-off condition.
- 7. Set the offset settings for LIVE and GAME mode as stated in the table 1 below:-

OFFSET TABLE (Table 1)

Live	← Personal	← Game
Adjusted value +2	BKOR (adjusted)	Adjusted value
Adjusted value -3	BKOG (adjusted)	Adjusted value
25hex	RDRV (25hex)	25hex
Adjusted value +2	GDRV (adjusted)	Adjusted value -2
Adjusted value +4	BDRV (adjusted)	Adjusted value -6






SECTION 3 CIRCUIT ADJUSTMENTS

3-1. ADJUSTMENT WITH COMMANDER

Service adjustment to this model can be performed using the supplied remote commander RM-W100.

a. ENTERING SERVICE MODE

With the unit on standby, press the following sequence of buttons on the remote commander.

➡ Display  ➡ Channel  5 ➡ Volume  ➡ Power  / TV 

'TT --' will appear in the upper right corner of the screen.

Other status information will also be displayed.

b. Press 'MENU' on the remote commander to obtain service menu on the screen.

GEOM
WHBL
SADJ
YC
SYNC
PICT
SW
VIF

c. The screen only displays 8 items at one time. To move to the corresponding item use the up down buttons on the remote commander.

d. Press the right / left button or ENTER button on the remote commander to enter into the required item.

Item Name	Range	Data
HPOS	(0,63)	52
HPAR	(0,63)	40

e. The screen only display 12 items at one time. To move to the corresponding item use the up down buttons on the remote commander.

f. Press right to increase or left to decrease the data.



g. Press the 'MENU' button on the remote commander to quit from Service Menu. Screen will still display 'TT --'. To exit from 'TT --' menu, press 0 twice, 'TEST', 'TV' or switch the TV into standby mode.

Note:

- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

3-2. ADJUSTMENT ITEM TABLE

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50	60	w50	w60
Category	No	Name	Dec	Dec								
GEOM	000	HPOS	031	063	Horizontal Shift (HS)	50/60/w50/w60(+ JPN RGB)	TV-Processor		31	31	31	31
	001	HPAR	031	063	Horizontal Parallelogram	50/60/w50/w60			31	31	31	31
	002	HBOW	031	063	Horizontal Bow	50/60/w50/w60			31	31	31	31
	003	VLIN	031	063	Vertical Linearity	50/60/w50/w60			31	31	31	31
	004	VSCR	031	063	Vertical Scroll	50/60/w50/w60			31	31	31	31
	005	HSIZ	031	063	EW Width (EW)	50/60/w50/w60(+ JPN RGB)			31	31	31	31
	006	EWPW	031	063	EW Parabola/Width (PW)	50/60/w50/w60			31	31	31	31
	007	UCOP	017	063	EW Upper Corner Parabola	50/60/w50/w60			17	17	17	17
	008	LCOP	017	063	EW Lower Corner Parabola	50/60/w50/w60			17	17	17	17
	009	EWTZ	031	063	EW Trapezium	50/60/w50/w60			31	31	31	31
	010	VSLP	031	063	Vertical Slope (VS)	50/60/w50/w60			31	31	31	31
	011	VSIZ	015	063	Vertical Amplitude	50/60/w50/w60			15	15	15	15
	012	SCOR	014	063	S-Correction (SC)	50/60/w50/w60			14	14	14	14
	013	VPOS	031	063	Vertical Shift (VSH)	50/60/w50/w60			31	31	31	31
	014	HBL	000	001	RGB Blanking Mode	50/60/w50/w60			01	01	01	01
	015	WBF	007	015	Timing of Wide Blanking (WBF)	50/60/w50/w60			09	09	09	09
	016	WBR	007	015	Timing of Wide Blanking (WBR)	50/60/w50/w60			10	10	10	10
	017	SBL	000	001	Service Blanking	none		00				
	018	COPY	000	001	Copy the GEO data to all 50/60Hz NVM area	none		00				

-  shaded items are adjustable data.
-  no data.

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Live (COOL other)	GAME (WARM other)	MOVIE/ PERSONAL (NEUTRAL other)	LIVE (COOL RGB)	GAME (WARM RGB)	MOVIE/ PERSONAL (NEUTRAL RGB)	Other	RGB	YUV	Pic mode 0 (LIVE)	Pic mode 1 (MOVIE)	Pic mode 2 (GAME)	Pic mode 3 (PERSONAL)
Category	No	Name	Dec	Dec																	
WHBL	000	BKOR	031	063	Black Level Offset R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)	TV-Processor		31	31	31	31	31	31							
	001	BKOG	031	063	Black Level Offset G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			31	31	31	31	31	31							
	002	RDRV	037	063	White Point R	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	003	GDRV	037	063	White Point G	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	004	BDRV	037	063	White Point B	col temp (HIGH/LOW/Normal)*(UV/RGB/Others)			37	37	37	37	37	37							
	005	LPG	000	001	RGB Gain Preset	none		00													
	006	PGR	031	127	Preset Gain R (PGR)	none		45													
	007	PGG	031	127	Preset Gain G (PGG)	none		45													
	008	PGB	031	127	Preset Gain B (PGB)	none		45													
	009	GNOF	000	015	Preset Gain Offset	none	CCC loop	08													
	010	SBRT	031	063	Sub-Brightness	Others/RGB/YUV									38	34	00				
	011	SBRO	000	003	Sub-Brightness Offset (Intelligent Pic)	none		00													
	012	EGL	000	001	Enable Gain Loop CCC System	none		00													
	013	SGL	000	003	Selection of High Current in CCC System	none		00													
	014	AKB	000	001	Black Current Stabilization	none		00													
	015	CBS	000	001	Control Sequence of Beam Current Limiting	none		00													
	016	RGBB	000	003	RGB Blanking	none		00													
	017	BLBG	000	001	Blanking of Blue & Green Output	none		00													
	018	OFB	000	001	Black Level Offset Blue	none		00													
	019	NSBR	000	015	Non-Standard Brightness Offset	none		00													
	020	WBP	000	003	Color Temp setting (0:High, 1:Normal, 2,3:Low)	Picture Mode											00	01	02	01	
	021	OUV	000	003	Offset Control on UV Input signals (only for US and Japan)	Others/YUV									00		00				

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50pal (TV)	50pal (Video)	50secam (TV)	50secam (video)	60TV	60Video	50RGB	60RGB	Pic mode 0 (LIVE)	Pic mode 1 (MOVIE)	Pic mode 2 (GAME)	Pic mode 3 (PERSONAL)	TV-IP ON	Video	RGB	TV Wide	Video Wide	
Category	No	Name	Dec	Dec																						
SADJ	000	PMAX	063	063	Picture Maximum	(TV/Video)*(Normal/Wide)<Normal/Wide> (+ JPN RGB)	TV-Processor														34	34		26	26	
	001	SHUE	007	015	Sub-Hue	TV/Video																07	08			
	002	SSHP	015	063	Sub-Sharpness	TV/Video/YUV (+ JPN RGB)																24	38	15		
	003	SSHO	000	003	Sub-Sharpness Offset (Intelligent Pic)	none		03																		
	004	SCOL	031	063	Sub-Color	50pal(tv)/50pal(video)/50secam(tv)/50secam(video)/ 60TV/60video/50YUV/60YUV/50RGB/60RGB			25	28	25	28	23	26	28	26										
	005	SCOO	000	003	Sub-Color Offset (Intelligent Pic)	none		02																		
	006	PIC	031	127	Picture Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]	Picture Mode (GA: Personal = User Reset Data)												63	35	38	55					
	007	COL	031	127	Color Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]	Picture Mode (GA: Personal = User Reset Data)												38	31	31	31					
	008	BRT	031	127	Brightness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]	Picture Mode (GA: Personal = User Reset Data)												31	35	31	31					
	009	HUE	031	127	Hue Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]	Picture Mode (GA: Personal = User Reset Data)												31	31	31	31					
	010	SHP	031	127	Sharpness Control [GA:0~100(valid); >100(invalid), Others:0~63(valid); ignore bit 6(invalid)]	Picture Mode (GA: Personal = User Reset Data)												42	28	31	31					

- shaded items are adjustable data.
- no data.



TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Others	PAL(TV)	NTSC(TV)	SECAM(TV)	PAL (Video)	NTSC (Video)	SECAM (Video)	S-INPUT	SECAM	NTSC	TV
Category	No	Name	Dec	Dec															
YC	000	PFRQ	000	003	Peaking Center Frequency and Delay		TV-Processor	00											
	001	RPA	001	003	Ratio Pre & Over Shoot	TV/other			02										01
	002	RPO	002	003	Ratio of Positive & Negative Peaks	TV/other			01										01
	003	YDLY	012	015	Y-Delay	(PAL/NTSC/SECAM)*(TV/VIDEO)+YUV/S-INPUT				06	06	06	05	05	05	10			
	004	CMAT	000	003	PAL-SECAM or NTSC (Japan/USA) Matrix	(JPN RGB)		00											
	005	ACL	001	001	Automatic Color Limiting			01											
	006	CB	000	001	Chroma Bandpass Center Frequency	valid only with TV (*Video : 0 fix)		00											
	007	SBO	001	003	SECAM Black Offset			01											
	008	CHSE	001	003	PAL/NTSC Ident Sensitivity			02											
	009	CLO	000	001	Center Frequency of Cloche (Bell) Filter			00											
	010	CTRP	000	001	Chroma Trap Mode	SECAM/others			00								01		
	011	BPS	000	001	Bypass of Chroma Base-band Delay Line	NTSC/others			00									00	
	012	FCO	000	001	Forced Color On			00											
	013	TINT	031	063	Base-Band Tint Control	YUV/Others			31										
	014	TUV	000	001	Tint Control on UV Signals			00											

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	50	60	Others	TV-IP ON	Video	Teletext	TV-IP OFF	No Signal
Category	No	Name	Dec	Dec												
SYNC	000	SYS	000	001	Synchronization on YSYNC Input		TV-Processor	00								
	001	FO	000	003	Phase 1 Time Constant	TV IP ON/TV IP OFF/Video/Teletext/Auto Tuning or No signal(RF)						00	03	01	03	00
	002	VID	000	001	Video Ident Mode	50/60			00	00						
	003	FSL	000	001	Forced Slicing Level for Vertical Sync			00								
	004	SSL	000	001	Slicing Level Sync Separator	50/60			00	00						
	005	SVID	001	007	Source Selection for Video Identification	YUV/Others					00					
	006	FORF	000	003	Forced Field Frequency			03								
	007	MVK	000	001	Macro Vision Keying			01								
	008	AFCT	000	003	AFC Timing Switch Control (GA, US:Pin 116, Euro, JPN: Pin 128)			03								

- ■ shaded items are adjustable data.
- ■ no data.

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	Others	RGB	Picture: Live	TV (Live)	TV (Others)	Video (Live)	Video (Others)	Color Temp (COOL)	Color Temp (Others)	Color Temp (Warm)	Color Temp (Neutral)
Category	No	Name	Dec	Dec															
PICT	000	CADL	007	015	Cathode Drive Level		TV-Processor	02											
	001	CFA	000	003	Comb Filter Mode			01											
	002	SOC	002	003	Soft Clipping Level			00											
	003	PWL	001	001	Peak White Limiting Switch			01											
	004	WHTL	006	015	Peak White Limiting			05											
	005	GAM	001	001	Gamma			01											
	006	WTS	001	003	Gamma Control and White Stretch	Live/Others			00		01								
	007	TFR	000	001	DC Transfer Ratio of Luminance Signal	Live/Others (+ JPN RGB)			00		01								
	008	COR	003	003	Coring	(TV/Video)*(Dyna/others)						02	02	00	01				
	009	CORO	000	001	Coring Offset (Intelligent Pic)			01											
	010	BKS	003	003	Black Stretch	RGB/others			02	02									
	011	AAS	001	001	Black Area to Switch off the Black Stretch			01											
	012	DSK	000	001	Dynamic Skin Control			00											
	013	BLS	000	001	Blue Stretch	col temp (HIGH/OTHERS)										01	00		
	014	NBLS	000	001	Operation Blue Stretch Circuit			00											
	015	NRR	000	001	Non Red Reduction	col temp (HIGH/LOW/NORMAL)										01		00	00
	016	CFA2	000	001	Forced Comb Filter on (Only for US & JPN)	none		00											



TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common	TV	Video
Category	No	Name	Dec	Dec						
SW	000	CV2	000	001	CVBS2 Input Signal Selection		TV-Processor	00		
	001	SVO	001	003	Function of IFVO/SVO/CVBSI Pin @ 48	TV/Video/YUV			01	01
	002	DFL	000	001	Flash Protection			00		

-  shaded items are adjustable data.
-  no data.

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common
Category	No	Name	Dec	Dec				
VIF	000	OIFD	036	063	Offset IF Demodulator		TV-Processor	36
	001	AGCT	031	063	AGC Take-over			36
	002	STM	000	001	Search Tuning Mode			01
	003	GD	000	001	Group Delay on CVBS1 Signal			00
	004	AGCS	001	003	IF AGC Speed			00
	005	FFI	000	001	Fast Filter IF PLL			00
	006	OAMP	003	003	Video Output Signal Amplitude (only L & L'System)			03
	007	VAI	000	001	System I Output Signal Amplitude Correction (only L & L'System)			01

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common
Category	No	Name	Dec	Dec				
SDEM	000	FMWS	000	003	Window Selection for FM Demodulator		TV-Processor	02
	001	QSS	001	001	Quasi Split Sound (QSS) Amplifier Mode (except GA Model)			01
	002	BPB	000	001	Bypass of Sound Bandpass Filter			00
	003	AMLO	000	001	Audio Output Signal for AM Sound			00
	004	HPVC	000	001	Head Phone Volume Control			00

TVJ	Functionality		Initial	Range	Function	Table & Note	Device Name	Common
Category	No	Name	Dec	Dec				
TXT	000	TXV	039	063	Teletext Vertical Position for Philips		Text Decoder	37
	001	THD	005	127	Teletext H-sync Active Edge Shift			05
	002	TBR	004	015	Teletext RGB Brightness			10

-  shaded items are adjustable data.
-  no data.

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	NVM Address / Initial Value (Detailed)								
Category	No.	Name	Dec	Dec				Common	Off	SRS/WOW	Trusurround	Istereo	Imono	TV-L(Euro)	TV	Video
SDSP	000	AVM	002	007	AVL Mode		SSD	02								
	001	AVV	005	015	AVL Reference Level		(80h)	09								
	002	BBL	000	015	BBE Contour			00								
	003	BBH	000	015	BBE Process			00								
	004	BBLW	000	015	BBE Contour Offset			06								
	005	SVOF	000	015	Surround /Effect Mode Volume Offset	Off(SRS/WOW)/Trusurround/Istereo/Imono			00	07	00	02	00			
	006	IVOF	000	007	Master Volume Positive Offset											
	007	EVOF	000	007	Master Volume Negative Offset			06								
	008	LAD	000	031	Decoder Level Adjust			06								
	009	LAM	000	031	Mono Level Adjust			05								
	010	LAN	000	031	Nicam Level Adjust			05								
	011	LAS	000	031	SAP Level Adjust			17								
	012	LAA	000	031	ADC Level Adjust	Tv/Video(Non Euro)I TV-L/TV-non L/Video		08						00	00	00
	013	SEF	003	007	Incredible Mono/Stereo Effect	Istereo/Imono					05	03				
	014	A1L	000	255	AUX1 Volume Left			00								
	015	A1R	000	255	AUX1 Volume Right			00								
	016	BAS	008	015	Main Bass Offset			14								
	017	TRE	008	015	Main Treble Offset			11								
	018	EQ1	008	015	Equalizer Main Channel Band (100 Hz) Offset			10								
	019	EQ2	008	015	Equalizer Main Channel Band (300 Hz) Offset			01								
	020	EQ3	008	015	Equalizer Main Channel Band (1000 Hz) Offset			00								
	021	EQ4	008	015	Equalizer Main Channel Band (3000 Hz) Offset			10								
	022	EQ5	008	015	Equalizer Main Channel Band (8000 Hz) Offset			00								
	023	BFCT	005	007	DBE, DUB and BBE Control			00								
	024	SCEN	001	015	SRS3D Center Control			04								
	025	SSPA	000	015	SRS3D Space Control			01								
	026	BBHW	000	015	BBE process offset in WOW mode			00								
	027	STRE	002	007	Treble Offset for surround mode			01								
	028	BBHT	000	015	BBE Offset in TV mode			00								
	029	DWA	000	000	DWA???			00								
	030	TTRE	002	007	Treble Offset in TV Mode			03								

TVJ	Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)	Common
Category	No.	Name	Dec	Dec				
SDEC	000	MPTU	003	015	Upper Threshold for MPX pilot detection (BTSC)		SSD	02
	001	MPTL	009	015	Lower Threshold for MPX pilot detection (BTSC)			05
	002	SPTU	003	015	Upper Threshold for SAP carrier detection			08
	003	SPTL	006	015	Lower Threshold for SAP carrier detection			15
	004	C1TH	000	031	Normal Threshold for detection of SC1			00
	005	C1AP	000	031	Auto Program Threshold for detection of SC1			00
	006	SPTH	000	031	Noise Threshold for automute of SAP			00
	007	SPHY	004	015	Hysteresis size for automute of SAP			03
	008	FMTH	000	031	Noise Threshold for automute of SC2 in FM A2 standard			18
	009	FMHY	004	015	Hysteresis size for automute of SC2 in FM A2 standard			07
	010	BTTH	000	031	Noise Threshold for automute of BTSC stereo carrier			00
	011	BTHY	004	015	Hysteresis size for automute of BTSC stereo			03
	012	EJTH	000	031	Noise Threshold for automute of EIAJ FM subcarrier			00
	013	EJHY	004	015	Hysteresis size for automute of EIAJ FM subcarrier			04
	014	ONLY	000	001	Reproduce only related NICAM on DEC output			00
	015	EXAM	000	001	Fall back source in case of automute in standard L (DDEP)			00
	016	NIMT	000	001	NICAM auto mute function depend on bit error rate (DDEP)			00
	017	NILE	100	255	NICAM lower error limit (DDEP)			50
	018	NIUE	200	255	NICAM upper error limit (DDEP)			200
	019	EPMD	001	003	DEMDEC Easy Programming (DDEP)			01
	020	STDS	019	031	Bits multiplexed for ASD and SSS modes			19
	021	OVMA	001	001	FM overmodulation adaption			00
	022	FLBW	000	003	FM/AM demodulator filter bandwidth			03
	023	IDMD	000	003	FM ident speed in SSS mode			00
	024	FPAL	000	001	Line frequency for BTSC decoding			00
	025	OVMT	001	002	Overmodulation level threshold relative to nominal			03
	026	DCXI	000	001	NICAM DCXO Scaling Control Inverter			00
	027	DCXG	000	007	NICAM DCXO Scaling Control Gain			00
	028	DCLL	011	015	NICAM DCXO Scaling Control Limit (L)			00
	029	DCLH	000	031	NICAM DCXO Scaling Control Limit (H)			00
	030	IDEU	001	003	IDMOD setting for European A2 STD			00
	031	IDKR	001	003	IDMOD setting for Korean M STD			00
	032	IDJP	001	003	IDMOD setting for EIAJ STD			00

TVJ	Functionality		Initial	Range	Function		Table & Note	Device Name	Common	50	60
Category	No	Name	Dec	Dec							
OPTM	000	ASHT	006	007	auto shut off timer (data*5 min)				06		
	001	OSDB	000	015	OSD Brightness			MMR/Micro 60h	03		
	002	OSDH	005	015	OSD Horizontal Position			MMR/Micro 60h	06		
	003	OSDV	037	063	OSD Vertical Position		50/60	MMR/Micro 60h		61	33
	004	MUTE	000	001	No Signal Mute Switch (1 = enabled)				01		
	005	RFUL	015	015	RF Signal Change Counter after Unlocked (Disable when 0Fh)				04		
	006	RFLK	015	015	RF Signal Change Counter after Locked (Disable when 0Fh)				00		
	007	AVUL	015	015	AV Signal Change Counter after Unlocked (Disable when 0Fh)				15		
	008	AVLK	015	015	AV Signal Change Counter after Locked (Disable when 0Fh)				15		
	009	LANG	000	003	OSD language shipping condition				00		
	010	HTXT	000	001	sync separator sw			TV-Processor	00		
	011	CMSS	000	001	Sync sw			TV-Processor	01		
	012	DCXO	127	255	DCXO offset from Flash Value			SFR/Micro 60h	70		
	013	EXBL	000	015	Extended Blanking Timer to Eliminate White Noise				07		
	014	TSYS	000	003	Memorize TV System in NVM at Test Reset (GA Model)				00		
	015	TVOU	001	001	TV Out Mute Condition 0:Always Mute off, 1:Mute without signal (EURO model)				01		

TVJ	Functionality		Initial	Range	Function		Table & Note	Device Name	Common
Category	No	Name	Dec	Dec					
OPTB	000	IALL	000	001	Standard Write Switch (not memorized in NVM)				00
	001	OPB1	000	255	Option 1 (System related)				*
	002	OPB2	000	255	Option 2 (Video Signal related)				*
	003	OPB3	000	255	Option 3 (Stereo Decoding related)				*
	004	OPB4	000	255	Option 4 (Miscellaneous)				*
	005	OPB5	000	255	Option 5 (Miscellaneous)				*
	006	OPB6	000	255	Option 6 (OSD Language related)				*
	007	BSWT	000	015	Band Switch Wait Time (not memorized in NVM)				00

- shaded items are adjustable data.
- no data.
- * Please refer page 22 and 23.

NOTE

- shaded items are adjustable data.
- no data.
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data: Those are the standard data values written on the microprocessor. Therefore, the data values of the modes are stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

OPTION NOTE

OPB1

Item	SPEED SEARCH		M/N	L'	L(Euro),M(GA)	B/G	I	D/K	DEC
KV-21CL5K	0	1	0	0	0	1	1	1	71

SPEED SEARCH (Time of speed search) 00 = disabled (original cycle speed),
01 = 4 time speed from the original,
10 = 6 time speed from the original,
11 = 8 time speed from the original
TV System Selection 0 = disabled, 1 = enabled

OPB2

Item	D1	AV Multi/ PAM(GA)	Component	Composite (SCART)		SECAM	Color decoding		DEC
KV-21CL5K	0	0	0	1	0	1	0	0	20

D1 (D1 Terminal) 0 = not available, 1 = available
AV Multi/PAM (AV Multi Terminal) – JP 0 = not available, 1 = available
Portable Audio Mode – GA 0 = not available, 1 = available
Component (Component [YCbCr] Terminals) 0 = not available, 1 = available
Composite (No. of Composite Terminals) 00 = no composite terminal (Euro : no Scart) BX1L: No Video
(SCART) (No. of SCART Terminals) 01 = 1 composite terminal (Euro : 1 Scart) BX1L: 2 Video in
10 = 2 composite terminal (Euro : 2 Scart) BX1L: 3 Video in
11 = 3 composite terminal (Euro : no terminal BX1L: 4 Video in)
SECAM (SECAM Color System) 0 = disabled, 1 = enabled
Color decoding (Color Crystal Selection) 00 = PAL/NTSC/SECAM (Multi), 01 = NTSC (3.58MHz)
10 = PAL/NTSC/SECAM (4.43MHz), 11 = PAL/NTSC (Tri-Norma)

OPB3

Item	HDEV	NICAM ST	NICAM BI	A2 ST	Thai Bilingual	JP/US ST	Korean ST	MONO	DEC
KV-21CL5K	0	0	0	0	0	0	0	1	00

HDEV (High Deviation Mode) 0 = disabled, 1 = enabled
NICAM ST (NICAM Stereo) 0 = disabled, 1 = enabled
NICAM BI (NICAM Bilingual) 0 = disabled, 1 = enabled
A2 ST/BI (A2 [West German] Stereo/Bilingual) 0 = disabled, 1 = enabled
Thai Bilingual (A2 [Thai] Bilingual) or Force SAP if JP/US ST is active 0 = disabled, 1 = enabled
JP/US ST (JP/US Stereo) 0 = disabled, 1 = enabled
Korean ST (Korean Stereo) 0 = disabled, 1 = enabled
MONO (Monaural Model) 0 = Stereo (SSD) Model, 1 = Monaural Model

OPB4

Item	Firmware/SMAT	1 spk Models	VM	Equalizer	Surround	V-Chip	TOP	TEXT	DEC
KV-21CL5K	0	0	0	0	0	0	0	1	01

Firmware	(SSD Firmware Downloading)			0 = disabled, 1 = enabled
SMAT	Surround Matrix			0 = Active, 1 = Passive
1 spk Models	1 Speaker Models			0 = 2 or 3 Speakers Models, 1 = 1 speaker Models
VM	(Velocity Modulation)			0 = disabled, 1 = enabled
Equalizer	(5-band Equalizer Model)			0 = Bass/Treble Model, 1 = Equalizer Model
Surround	(US/GA Surround Selection)			0 = Off/Simulated/Surround, 1 = Off/Simulated/WOW/TruSurround (US) 1 = Off/Simulated/SRS(3D)Surround (GA)
V-Chip	(V-Chip Model)			0 = Channel Block Model (no rating) 1 = Parental Control Model (rating)
TOP	(Forced TOP)			0 = Auto Mode (TOP/FLOF), 1 = Forced TOP
TEXT	(Teletext Model)			0 = Non-Teletext Model, 1 = Teletext Model

OPB5

Item	Full Surround	No Surround	Forced 60	ASD	Tilt	IP Plus	IP	Wide	DEC
KV-21CL5K	0	1	0	0	1	1	1	1	79

Full Surround	(Full Surround option - no for euro model)			0 = Normal surround model, 1 = Full surround model (Off/simulated/surround/SRS/WOW/TruSurround)
No Surround	(No Surround Model)			0 = Surround Model, 1 = Non-Surround Model
Forced 60	(Forced 60Hz in no signal)			0 = 50Hz, 1 = 60Hz
ASD	(Automatic Standard Detection)			0 = disabled, 1 = enabled
Tilt	(Tilt Correction/PIC Rotation)			0 = disabled, 1 = enabled
IP Plus	(Intelligent Picture Plus)			0 = disabled, 1 = enabled
IP	(Intelligent Picture)			0 = disabled, 1 = enabled
Wide	(Wide Mode/V-Compressed)			0 = disabled, 1 = enabled

OPB6

Item	GA US	Latin	Feature 2	Feature 1	OSD Language Selection				DEC
KV-21CL5K	0	0	0	0	0	0	1	0	02

GA US	(US Model Destination)			0 = US/Canada/Latin, 1 = Taiwan/Korea/Philippine
Latin	(US Model Latin Destination)			0 = US/Canada (No Volume Figure Display) 1 = Latin (Volume Figure Display)
Feature 2	(Temporary for BX1L)			0 = Comb Not available 1 = Comb Available
Feature 1	(Temporary for BX1L)			0 = PiP Not available 1 = PiP Available
OSD Language Selection (English always available except JP)		US		01xx = French, 0x1x = Spanish 0xx1 = Portuguese
		US (GA NTSC)		1x1x = Complicated Chinese, 1xx1 = Korean
		GA		1xxx = Simplified Chinese, x1xx = Arabic, xx1x = Thai xxx1 = Vietnamese
		EU		0000 = Destination ADE 0001 = Destination BL 0010 = Destination KR 0011 = Destination U

3-3. T-MODE:

T-Mode is available by pressing the 'TEST' button once, OSD 'T' appears. The function described below are available by selecting the indicated keys. The 'T' is released automatically after each command is executed.

KEY	T-MODE FUNCTION
volume +	volume maximum
volume –	volume minimum
picture +	picture maximum
picture –	picture minimum
colour up	colour maximum
colour down	colour minimum
brightness-bright	brightness maximum
brightness-dark	brightness minimum
hue-purplish	hue-purplish
hue-greenish	hue-greenish
sharpness-sharp	sharpness maximum
sharpness-soft	sharpness minimum
balance left	balance full left (only stereo)
balance right	balance full right (only stereo)
treble up	treble maximum (only stereo)
treble down	treble minimum (only stereo)
bass up	bass maximum (only stereo)
bass down	bass minimum (only stereo)

3-4. TT-MODE:

TT-Mode is available by pressing the 'TEST' button twice, OSD 'TT – –' appears. The function described below are available by pressing two digits.

00	Exit from TT mode
01	Set Picture Level to Maximun
02	Set Picture Level to Minimum
03	Set Volume to 35%
04	Set Volume to 50%
05	Set Volume to 65%
06	Set Volume to 80%
07	Ageing Mode On
08	Shipping Condition
11	Sub Picture Adjustment
12	Sub Colour Adjustment
13	Sub Brightness Adjustment
14	Text H Position Adjustment
15	Rotation Coil Test
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
24	Destination U
31	Auto Shutoff Disable/Enable
33	Rotation On/Off
41	Re-initialise NVM
43	Select Dual A Sound (only stereo)
44	Select Dual B Sound (only stereo)
45	Select Mono Sound (only stereo)
46	Select Stereo Sound (only stereo)

48	Set NVM as non-virgin
49	Set NVM as virgin
61	Auto AGC Adjustment
64	RGB priority (toggle) On: FS input (Pin 16)is always active Off: FS input is active only in AV1 (Scart)
65	RGB Auto Detection (Toggle) Auto: AV1 or RGB is automatically selected at the change of AV input to AV1 (Scart) by user or mode Pin 8 Off: AV input toggle has AV1 and RGB respectively (TV --> AV1 --> RGB --> AV2 -->...)
67	Manual AGC Adjustment
71	Force PAL Video
72	Un-force PAL (cancel the function above)
73	Enable Zweiton D/K2 System (6.5/6.74) (only stereo)
74	Enable Zweiton D/K3 System (6.5/5.74) (only stereo)
78	Balance Full Left (only stereo)
79	Balance Full Right (only stereo)
81	Auto NICAM DCXO calibration (only stereo)
87	Local Keys Test
93	Set 16:9 zoom mode
95	Set 4:3 Zoom Mode
99	Display Error and Working Time Menu

To release the 'TT-Mode', press 0 twice, press 'TEST', press 'TV' or switch the TV into standby mode.





3-5. T-Cyan MODE:

T-Cyan Mode is available by pressing the 'TEST' and 'Cyan' keys. T-Cyan is basically for white balance and geometry adjustments. The functions described below are available by pressing the indicated keys.





In T-Cyan Mode a single 'T' is displayed in cyan colour. To release from this mode, press the 'TV' key once.

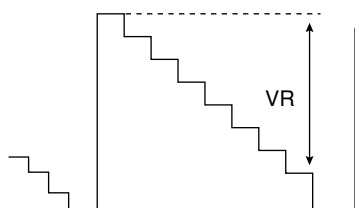
KEY	T CYAN FUNCTION
1	Pin Amplitude –
2	Vertical Centre –
3	Pin Amplitude +
4	Vertical Centre –
5	Vertical Size +
6	Horizontal Centre +
7	Horizontal Size –
8	Vertical Centre +
9	Horizontal Size +
0	Vertical Size –
Volume +	Upper Corner Pin +
Volume –	Lower Corner Pin +
Programme +	Upper Corner Pin –
Programme –	Lower Corner Pin –
Cyan	Bow –
Yellow	Pin Phase –
Green	Bow –
Red	Pin Phase +
Video	Vangle +
Information	Vangle –

3-6. SUB BRIGHTNESS ADJUSTMENT

1. Input a PAL monoscope pattern.
2. Go to Test Mode.
3. Press 'Test' 'Test 13' on the Remote commander.
PICTURE MINIMUM, BRIGHTNESS 50%
4. Select WHBL "SBRT" by pressing right  or left  button and adjust "SBRT" data. To adjust the data, again press right  to increase or left  to decrease the data until there is barely a difference between 0 IRE and 10 IRE signal levels.

3-7. SUB CONTRAST ADJUSTMENT

1. Select Video Mode.
2. Input PAL Colour Bar to TV set.
3. Set the following condition:
PICTURE 100%, COLOUR 0%, BRIGHTNESS 50%
(IN PERSONAL MODE)
4. Connect an oscilloscope to pin 4 (R output) of CN004.
5. Enter Service Menu.
6. Set PICT 03 "PWL" to 00 and WHBL 17 "BLBG" to 01.
7. Select SADJ "PMA" with right  or left  button of the commander then adjust VR within spec with right  or left  button.



$VR = 1.50 \pm 0.03 \text{ Vp-p}$
(Difference is within 30mV)

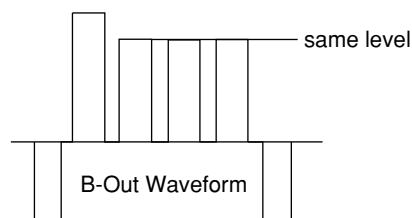
8. Set "PWL" and "BLBG" back to initial data respectively.

OR

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect a digital voltmeter to pin 10 of J751 (C board).
3. Adjust the sub-contrast ("TT11") to obtain a voltage of $86 \pm 5 \text{V}$.

3-8. SUB COLOUR ADJUSTMENT

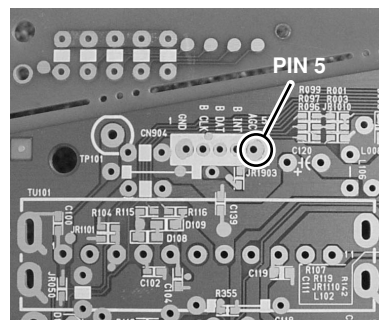
1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 2 of CN004(A board).
3. Enter into the Service Menu.
4. Set PICT 06 "WTS" to 00.
5. Adjust SADJ "SCOL" data so that the cyan, magenta and blue colour bars are equal level.



3-9. TUNER AGC ADJUSTMENT

Note: There should be no need to adjust the AGC as this is pre-adjusted during manufacturing. If the AGC does need adjustment then follow steps 1 to 4 as below.

1. Receive a signal of 61dBuV/75ohm terminated via the tuner antenna socket.
2. Connect a voltmeter to the AGC pin 5 of CN904 (mount side of A board).
3. Confirm that the AGC voltage is 3.2volts ± 0.5 volts.
4. If adjustment is required, then re-adjust the AGCT in service menu to obtain a voltage of 3.2V ± 0.5 V.



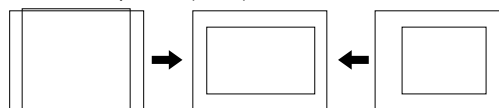
[Print side of A board]

3-10. DEFLECTION ADJUSTMENT

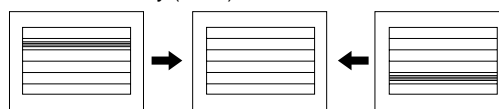
1. Set the TV mode to normal (4:3).
2. Enter into the 'GEOMETRY' service menu.
3. Select and adjust each item in order to obtain the optimum image. (see table below)
4. Repeat the above for 16:9.

GEOMETRY				Remark
HPOS	(0,63)	Adj		Horizontal Shift
HPAR	(0,63)	Adj		Horizontal Parallelogram
HBOW	(0,63)	Adj		Horizontal Bow
VLIN	(0,63)	Adj		Vertical Linearity
VSCR	(0,63)	31		Vertical Scroll
HSIZ	(0,63)	Adj		EW Width
EWPW	(0,63)	Adj		EW Parabola/Width
UCOP	(0,63)	Adj		EW Upper Corner Parabola
LCOP	(0,63)	Adj		EW Lower Corner Parabola
EWTZ	(0,63)	Adj		EW Trapezium
VSLP	(0,63)	31		Vertical Scope
VSIZ	(0,63)	Adj		Vertical Amplitude
SCOR	(0,63)	Adj		S-Correction
VPOS	(0,63)	Adj		Vertical Shift
WBF	(0,63)	06		Timing of Wide Blanking
WBR	(0,63)	06		Timing of Wide Blanking

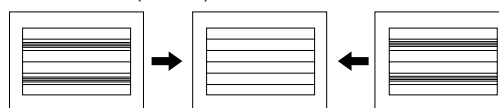
Vertical Amplitude (VSIZ)



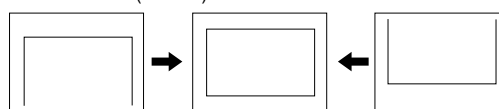
Vertical Linearity (VLIN)



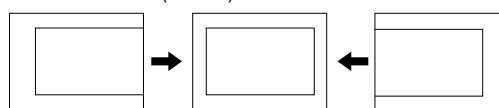
S-Correction (SCOR)



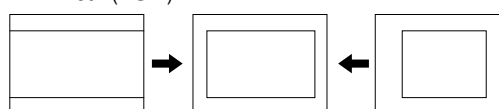
Vertical Shift (VPOS)



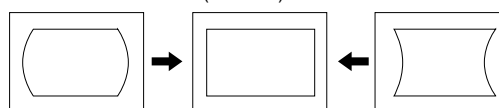
Horizontal Shift (HPOS)



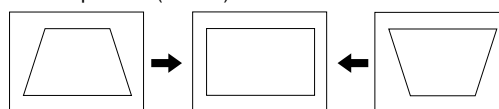
EW Width (HSIZ)



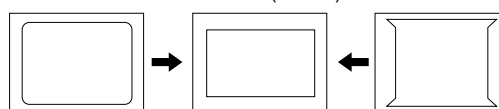
EW Parabola/Width (EWPW)



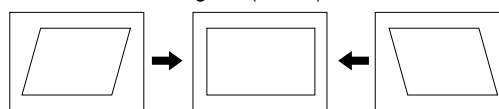
EW Trapezium (EWTZ)



EW Upper Coner Parabola (UCOP)
EW Lower Coner Parabola (LCOP)

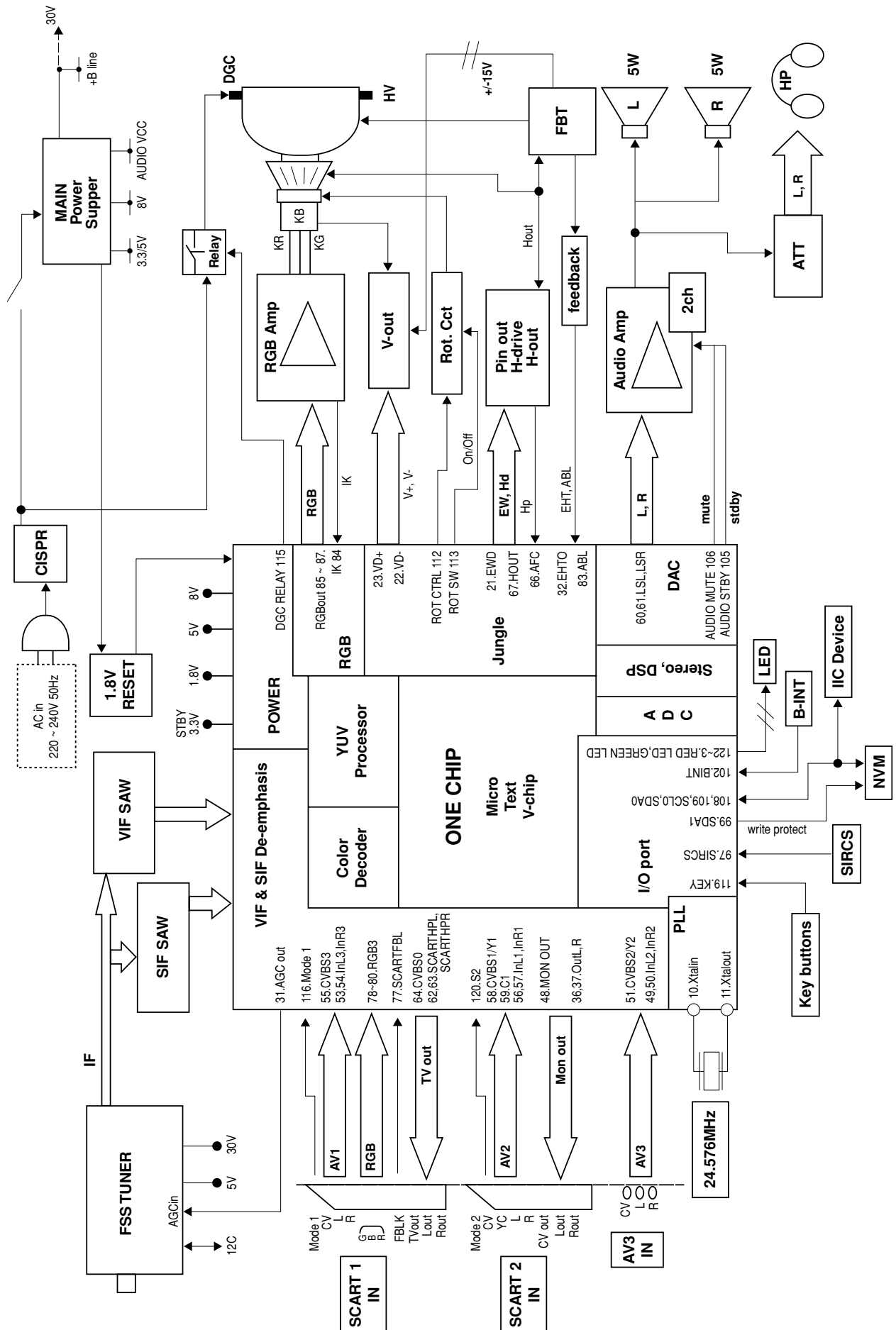


Horizontal Parallelogram (HPAR)

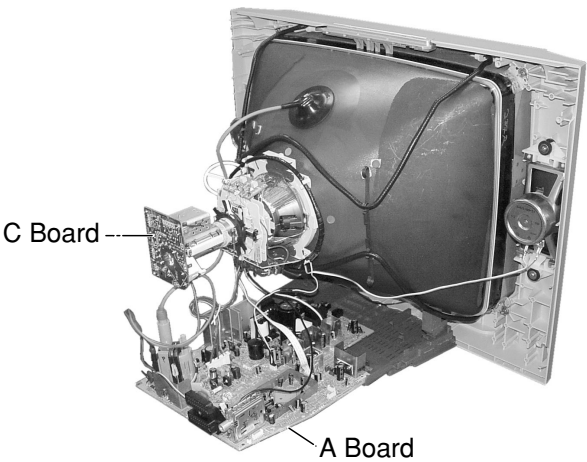


SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



4-2. CIRCUIT BOARDS LOCATION








4-3. SCHEMATIC DIAGRAM

Note:

- All capacitors are in μF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
 $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance which does not have rating electrical power is as follows.

Pitch: 5 mm
Rating electrical power 1/4W (CHIP: 1/10W)

-  : nonflammable resistor.
- Δ : internal component.
-  : panel designation or adjustment for rrepair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
- **Readings are taken with a 10 $\text{M}\Omega$ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in Volt.**
- * : Cannot be measured.
- **Circled numbers are waveform references.**
-  : B +bus.
-  : B -bus.
-  : signal path.

Note: The reference number which starts with Wxxx (eg: W003) indicates a wire to wire connection.

Note: Components marked as XX are not fitted on this model.

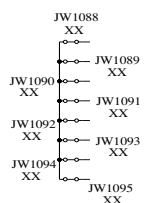
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
	: TA	TANTALUM
COIL CAPACITOR	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

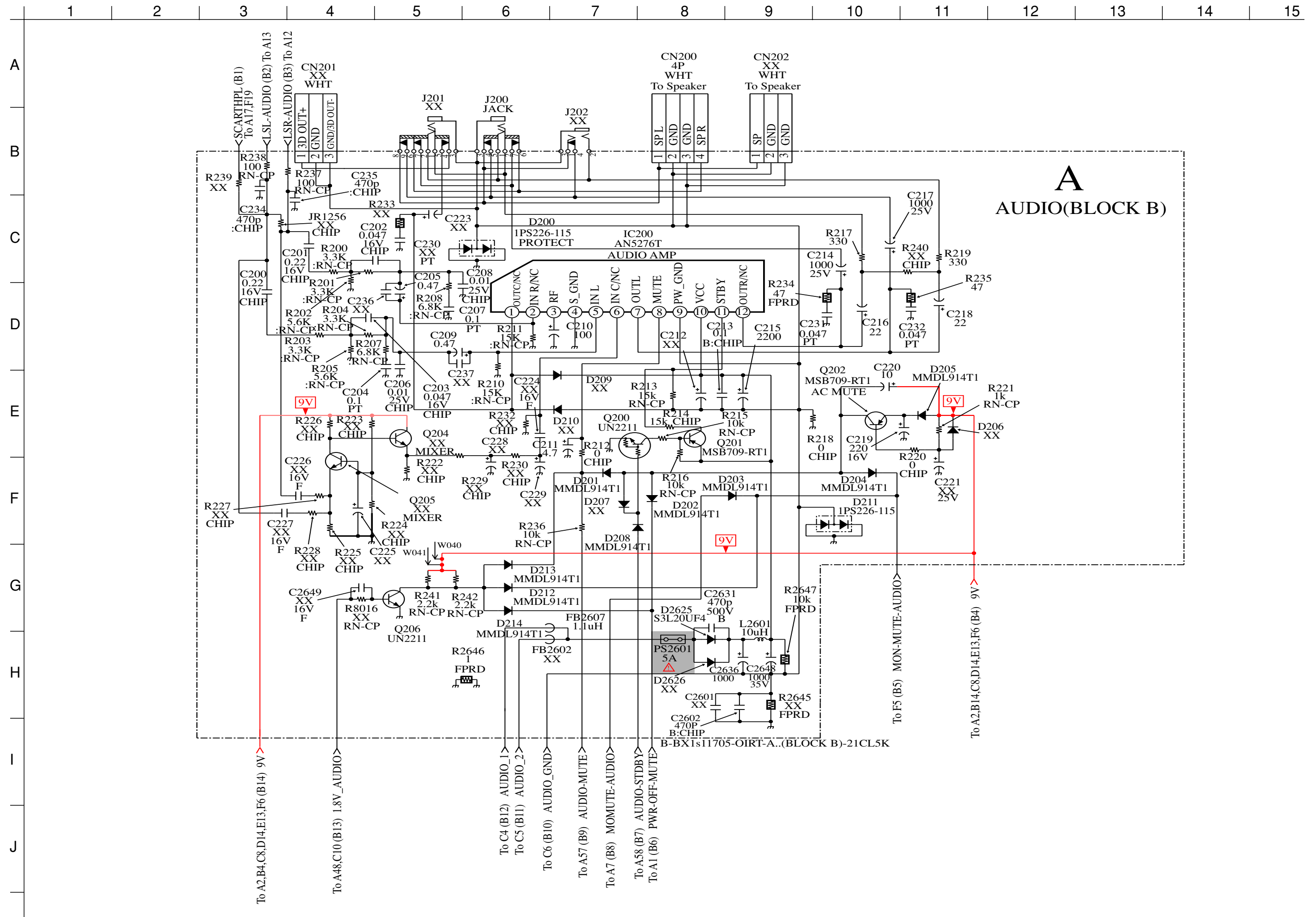
Note: The component identified by shading and mark Δ are critical for safety. Replace only with part number specified.

Note: "A" board schematic diagram is divided into 6 Block. Each block is named by its function and block "alphabet".
eg: Processor (Block A)
Joint connection between boards can be identified using the block alphabet followed by sequence numbering.
eg: -<HOUT-DEFL (A10) To D11
Meaning: Block A joint A10 is connected to Block D joint D11

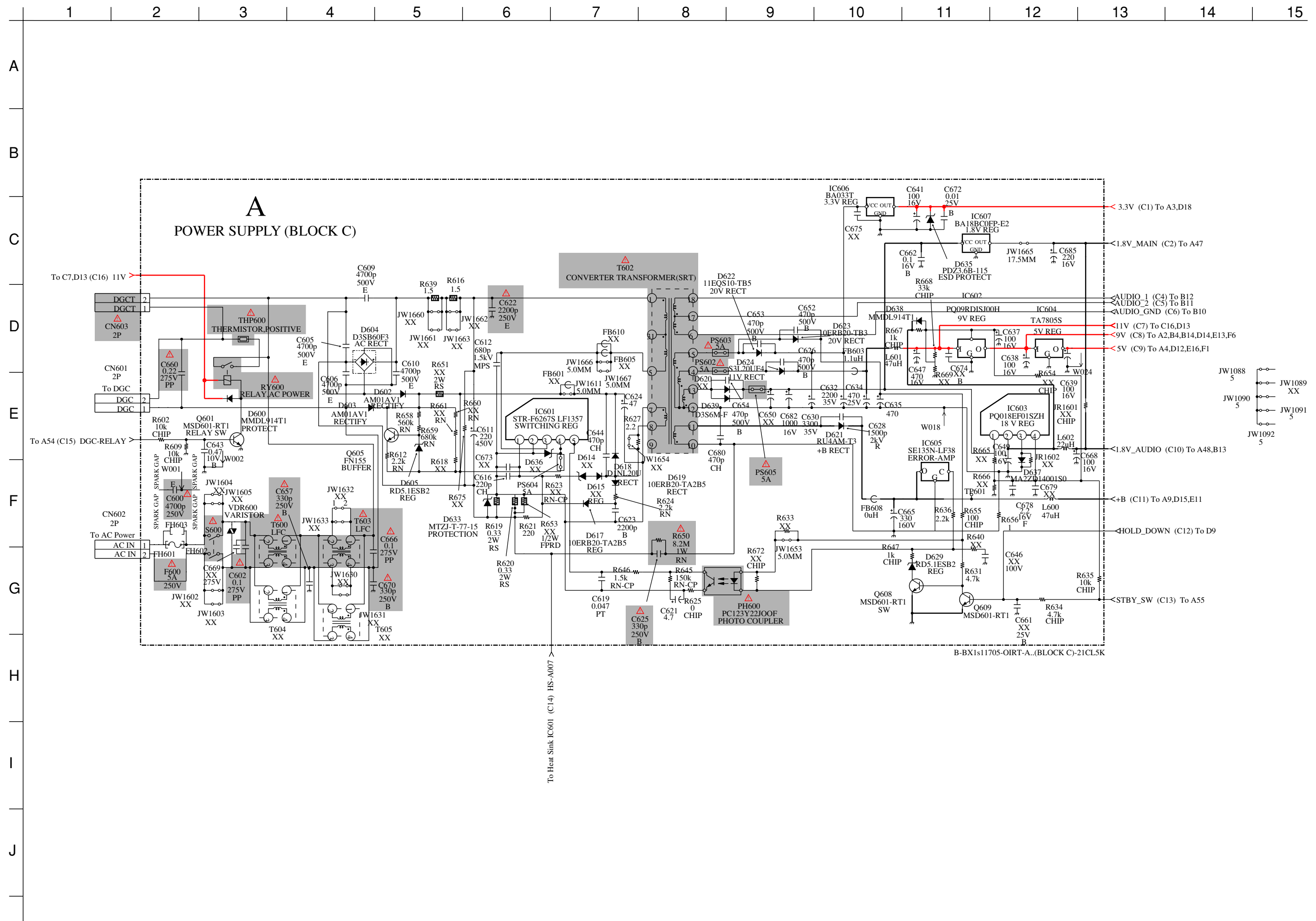
A
—
B
—
C
—
D
—
E
—
F
—
G
—
H
—
I
—
J



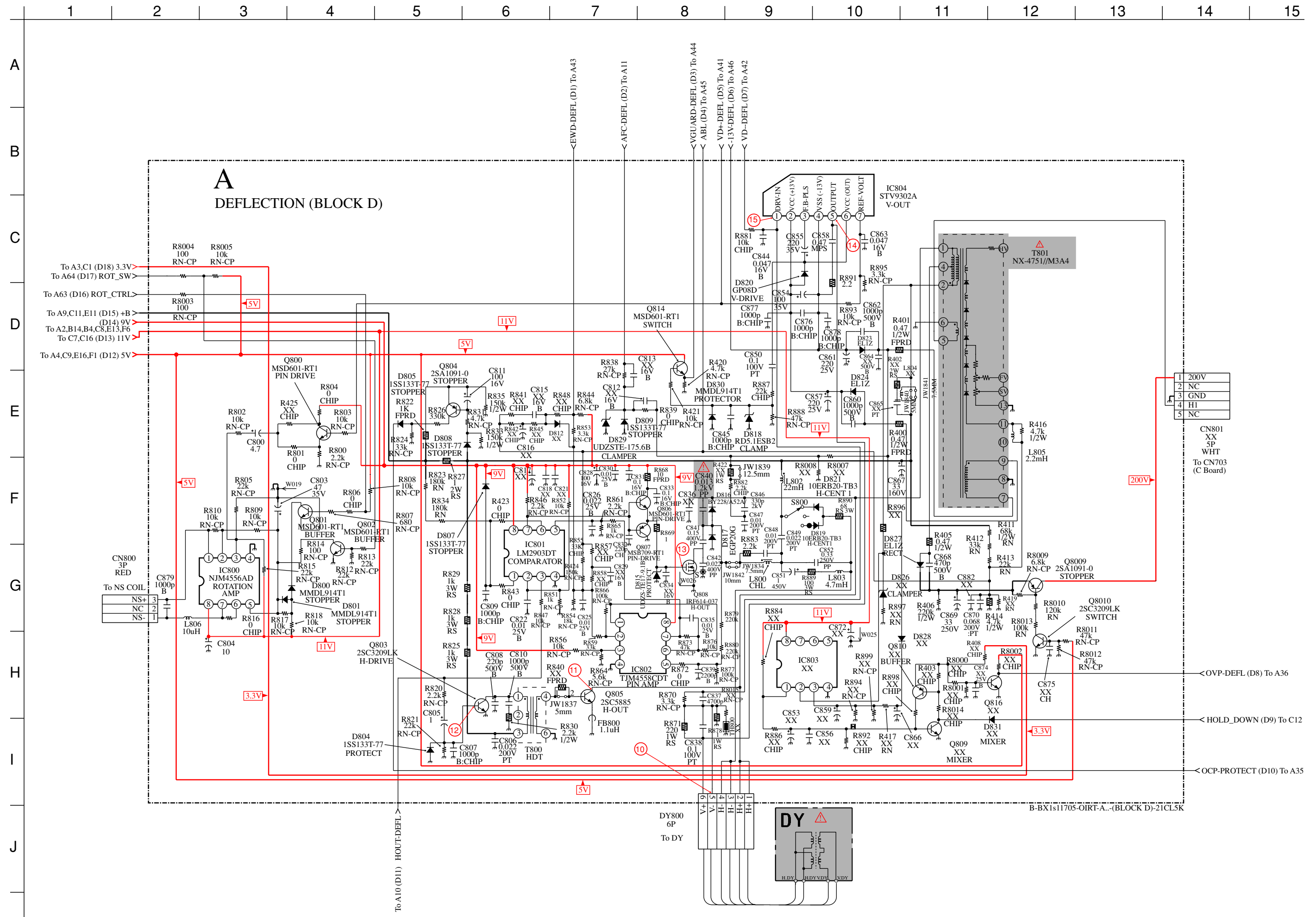
4-3-2. A Board – Audio (Block B)



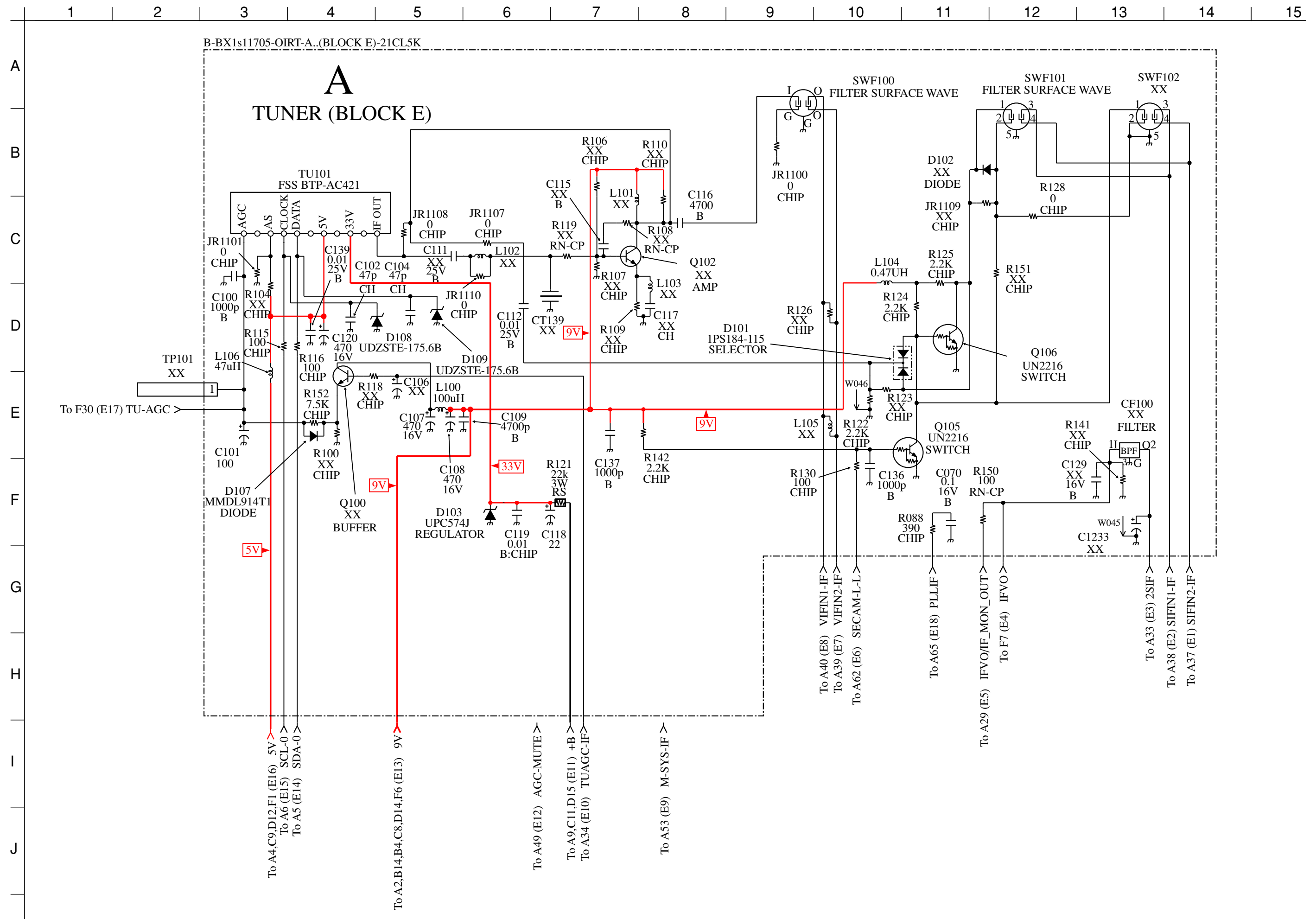
4-3-3. A Board – Power Supply (Block C)



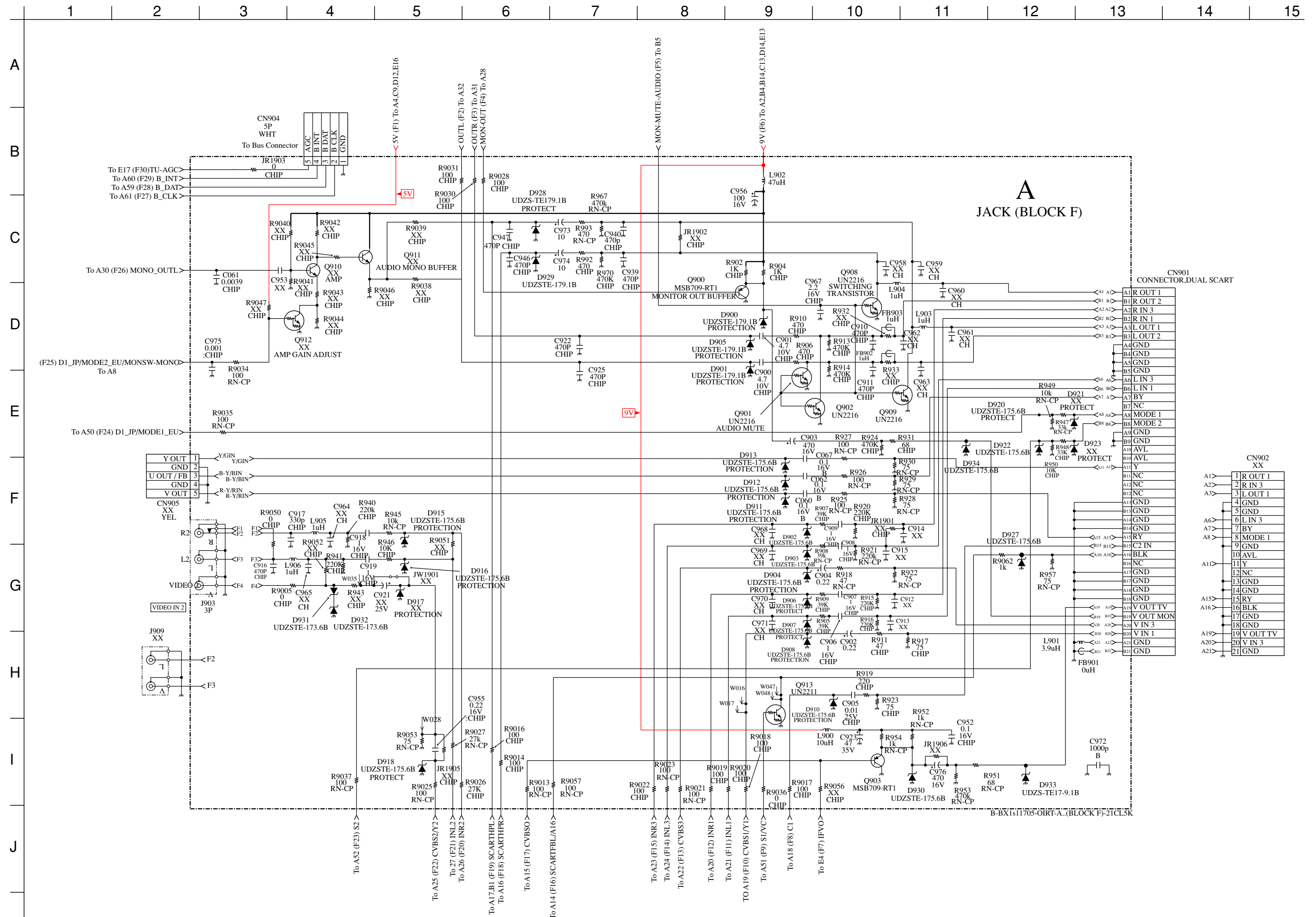
4-3-4. A Board – Deflection (Block D)



4-3-5. A Board – Tuner (Block E)




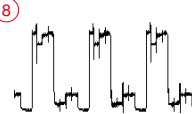
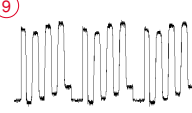


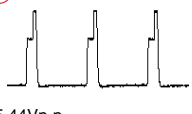

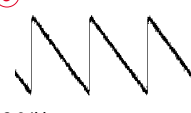
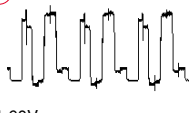
4-3-6. A Board – Jack, Scar t Terminal (Bloc k F)



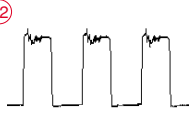
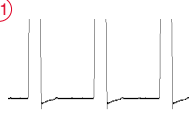




4-4. VOLTAGE MEASUREMENT AND WAVEFORM

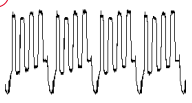
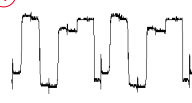
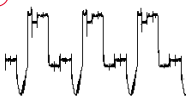
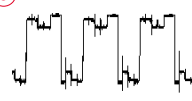
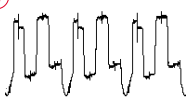
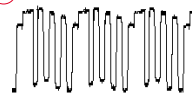
A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]				
IC001	1	0.01		48	0.05		86	1.5				
	2	0.01		<div>④</div>  <div>2.16Vp-p</div>	<div>⑧</div>  <div>1.40Vp-p</div>							
	3	0.03					87	1.6				
	4	3.3					<div>⑨</div>  <div>1.40Vp-p</div>					
	5	3.3						88	3.3			
	6	0.01						89	0.01			
	7	3.3						90	3.3			
	8	0						91	0.03			
	9	3.3						92	0.01			
	10	—						93	0.05			
	11	—						94	3.3			
	12	10		95	0.01							
	13	0.17		96	1.7							
	14	2.5		97	1.5							
	15	4.9		98	3.6							
	16	1.9		99	3.6							
	17	2.3		100	1.8							
	18	0.01		101	0.01							
	19	2.3		102	3.3							
	20	2.3		103	0.73							
	21	4.3		104	0.05							
	<div>①</div>  <div>1.08Vp-p</div>	22		0.05	67		1.4	105	2.7			
		<div>②</div>  <div>1.92Vp-p</div>		<div>⑤</div>  <div>5.44Vp-p</div>	<div>⑥</div>  <div>3.12Vp-p</div>		106	0.03				
							23	0.01	107	3.3		
							<div>③</div>  <div>2.04Vp-p</div>	<div>⑦</div>  <div>1.60Vp-p</div>	108	3.2		
									24	2.0	109	3.6
									25	2.0	110	3.3
									26	2.4	111	0.64
									27	2.0	112	0.03
									28	0.05	113	0.04
									29	0.04	114	3.0
	30								1.9	115	0.03	
	31	2.7		116	0							
	32	0.55		117	0.02							
	33	0.04		118	1.8							
	34	0.04		119	1.8							
	35	2.2		120	0.74							
	36	3.1		121	0.01							
	37	3.1		122	0.01							
	38	0.03		123	3.3							
	39	2.4		124	0.05							
	40	0.01		125	0.01							
	41	2.0		126	3.3							
	42	1.9		127	3.4							
	43	2.3		128	0.13							
	44	0.03		IC002	VCC		56.2					
	45	8.5			G		55.6					
	46	2.3			O		55.6					
	47	4.9			IC003		1	0				
							2	0				
		3	0									
		4	0									
		5	3.6									
		6	3.6									
		7	0									
		8	3.3									

A BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC200	1	0.01		6	14.0	Q803	B	0.05
	2	(-0.01)[0]		7	0.44		<div>  <p>1.40Vp-p</p> </div>	
	3	22.6	PH600	1	19.1	Q805	C	55.4
	4	0		2	18.0		E	0.01
	5	(-0.01)[0]		3	0.05		B	-0.08
	6	(0.01)[0.02]		4	2.6		C	135.4
	7	11.2	Q001	B	0.02	Q806	<div>  <p>328.0Vp-p</p> </div>	
	8	0.8		C	0.02		E	0.02
	9	0		E	2.8		B	6.0
	10	23.8	Q006	B	3.3		C	8.9
IC601	11	10.4		C	2.1	Q807	E	5.6
	12	11.1		E	2.0		B	6.0
			Q007	B	0.01		C	0
				C	3.3	Q808	E	5.6
				E	0.34		S	0.01
IC602	I	14.2	Q008	B	-0.44	Q814	<div>  <p>584mV</p> </div>	
	G	-0.01		C	0.02		G	5.6
	O	8.9	Q009	E	0		D	6.1
IC604	I	8.9		B	0		B	0.04
	G	-0.01	Q012	C	2.2		C	4.9
	O	4.9		E	0	Q900	E	0.22
IC800			Q013	B	0.63		B	1.3
	1	3.8		C	0.03		C	0
	2	7.1		E	0	Q901	E	2.0
	3	7.1	Q100	B	0.04		B	0.24
	4	-0.01		C	1.8		C	0.03
	5	10.4		E	0	Q902	E	0.01
	6	10.2	Q105	B	2.7		B	0.24
	7	10.2		C	8.9	Q903	C	0.01
IC801	8	14.2		E	2.1		E	0.01
			Q106	B	0.03	Q908	B	4.3
	1	2.2		C	0.03		C	1.4
	2	0.83		E	4.8	Q909	E	4.9
	3	1.5	Q200	B	0.01		B	0.24
	4	0		C	0.02	Q910	C	1.1
	5	2.8		E	0.02		E	0.02
	6	2.3	Q201	B	0.04	Q912	B	0.25
IC802	7	6.0		C	8.9		C	1.1
	8	9.0		E	0.07	Q910	E	0.01
			Q202	B	-0.01		B	0.01
	1	1.8		C	23.0	Q908	C	0.01
	2	3.2		E	24.0		E	0.01
	3	3.2	Q204	B	24.0	Q8010	B	0.58
	4	0		C	8.9		C	0.12
	5	2.2		E	0.04		E	0.01
IC803	6	2.2	Q205	B	0.01	Q802	<div>  <p>1.50Vp-p</p> </div>	
	7	4.1		C	0.01			
	8	8.9		E	0.02			
	1	0.02	Q601	B	0.02			
	2	0		C	0.04	Q801	B	0.08
	3	0.01		E	14.2		C	11.0
	4	0.01	Q608	B	0		E	0.07
	5	0.02		C	15.5	Q802	B	0.05
IC804	6	0		E	0		C	10.4
	7	-0.01	Q609	B	0.66		E	0
	8	0.01		C	0.01	Q800	B	1.7
				E	0		C	8.9
			Q800	B	1.7		E	1.1
				C	8.9	Q801	B	0.08
				E	1.1		C	11.0
			Q801	B	0.08		E	0.07
				C	0.08	Q802	B	0.05
				E	0.07		C	10.4
			Q802	B	0.05		E	0
				C	10.4	Q803	B	0.05
				E	0		C	0.01

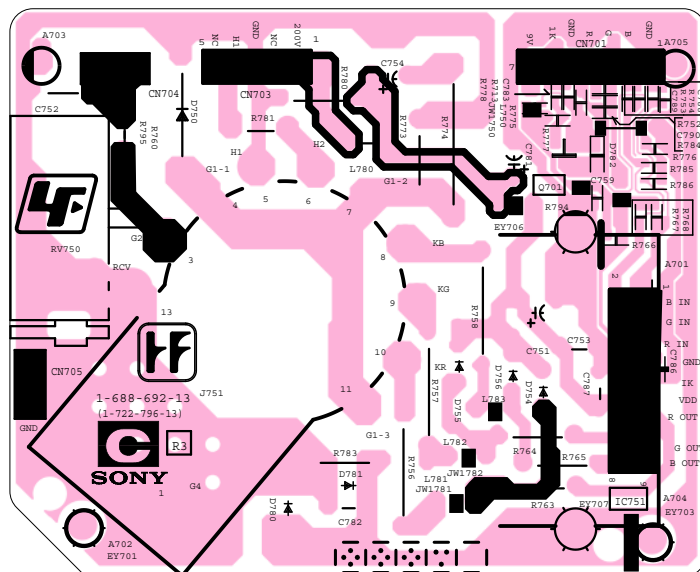
C BOARD VOLTAGE LIST AND WAVEFORM

Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
IC751	1	1.7		7	139.2
	① 	1.56Vp-p		④ 	108.0Vp-p
	2	1.6		8	149.0
	② 	1.66Vp-p		⑤ 	98.0Vp-p
	3	1.7		9	138.4
	③ 	1.64Vp-p		⑥ 	98.0Vp-p
	4	0	J751	5	0
	5	4.2		6	0
	6	197.7		8	138.2
				9	150.0
				10	140.0

PRINTED WIRING BOARDS

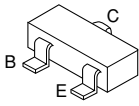
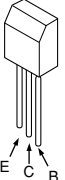
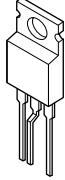
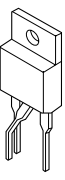
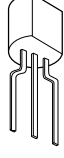
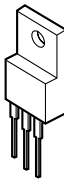
C [RGB AMP]

– C Board –

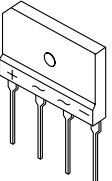
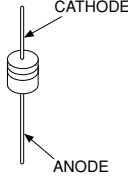
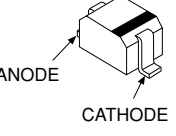

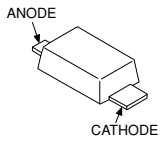


4-6. SEMICONDUCTORS

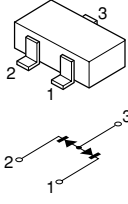
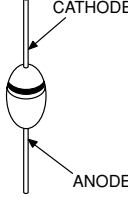
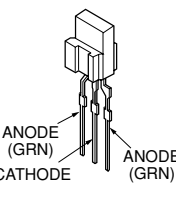
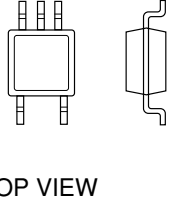
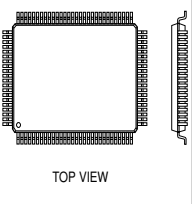
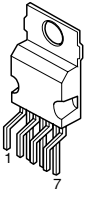
TRANSISTOR

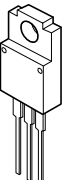
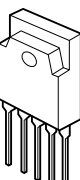
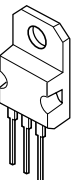
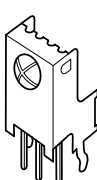
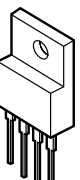
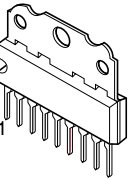
					
MSB709-RT1 MSD601-RT1 UN2211 UN2216	2SC3209LK	IRF614-005	FN155	2SA1091-0	2SC5885

DIODE

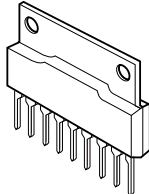
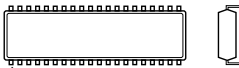
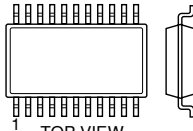
					
D3SB60F3	HSS82-TJ RD5.1ESB2 MTZJ-T-77-15 UPC574J 1SS133T-77	MMDL914T1 RD3.6SB	AM01AV1 D1NL20U D3S6M-F EGP20G EL1Z GPO8D RU4AM-T3	S3L20UF4 10ERB20-TA2B5 10ERB20-TB3 11EQS10-TB5	MA2ZD14001SO UDZSTE-175.6B UDZSTE-179.1B

IC

					
1PS226-115	BY228/A52A	SPB-25MVWF	BA18BC0FP-E2	TDA12027H/ N1B0B0AJ	STV9302A

					
BA033T	STR-F6267S-LF1357	TA7805S	RPM7240-H5	PQ09RD1SJ00H PQ018SEF01SZH	TDA6108AJF/N1

IC

	<p>DIP</p>  <p>TOP VIEW</p> <p>Dual In-line Package Pin 6~98</p>		<p>SOP</p>  <p>TOP VIEW</p> <p>Small Outline L-leaded Package Pin 8~98</p>		
AN5276T	NJM4556AD		CAT24WC16J1-TE13 LM2903DT TJM4558CDT		

SECTION 5 EXPLODED VIEWS

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

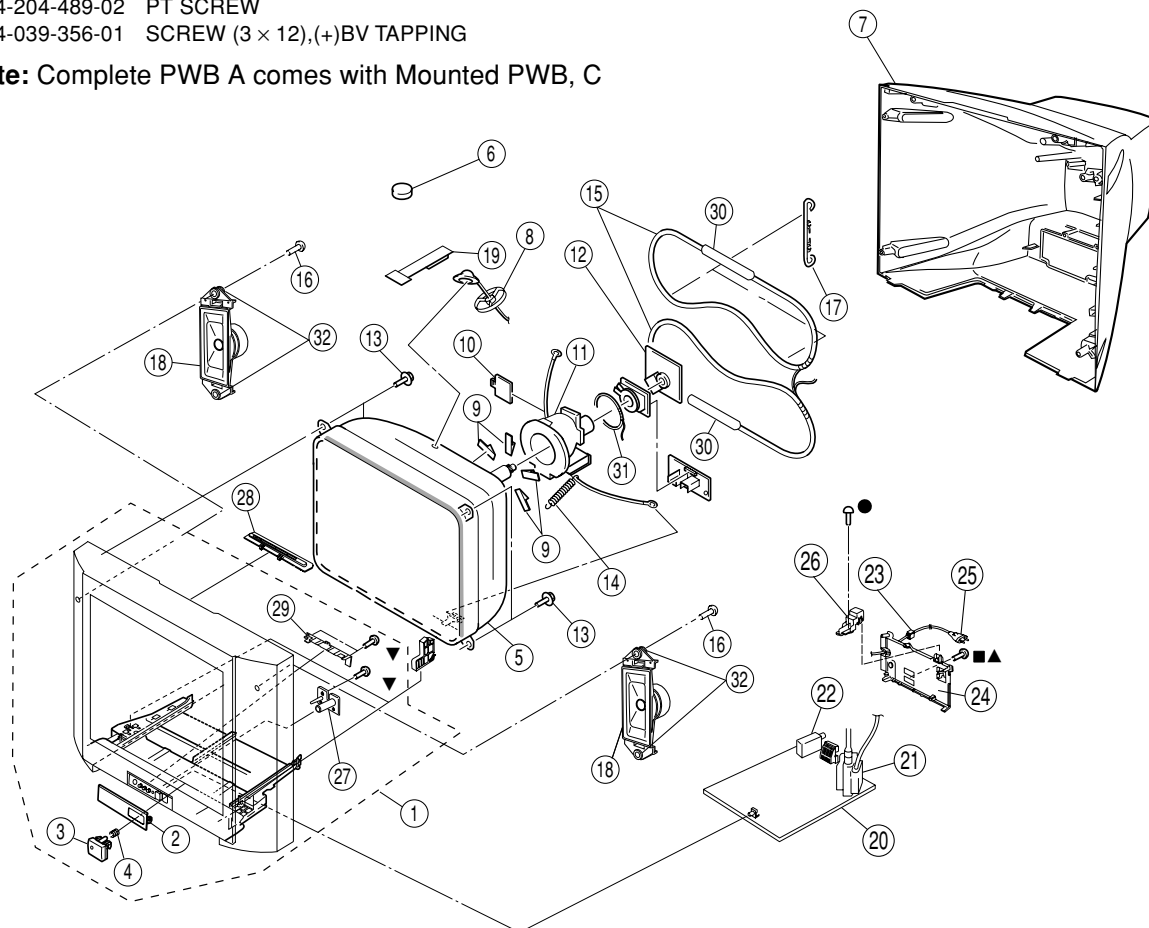
The components identified by shading and mark Δ are critical for safety.

Replace only with part number specified.

5-1. CHASSIS

- : 7-685-648-79 SCREW +BVTP 3 × 12
- : 7-685-663-71 SCREW +BVTP 4 × 16
- ▲ : 4-204-489-02 PT SCREW
- ▼ : 4-039-356-01 SCREW (3 × 12),(+)BV TAPPING

Note: Complete PWB A comes with Mounted PWB, C



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4042-200-1	BEZNET ASSY	2-4, 27, 29
2	4-093-773-01	CONTROL DOOR	
3	4-092-366-01	BUTTON POWER	
4	4-036-405-71	SPRING COMPRESSION	
5	Δ 8-738-867-05	PICTURE TUBE (A51LPT60X)	
6	1-452-032-00	MAGNET DISC	
7	4-093-512-11	COVER REAR (Δ 8 screws)	
8	4-202-554-02	HOLDER HV CABLE	
9	4-046-600-11	SPACER DY	
10	4-077-228-02	PIECE TLH CONVERGENCE	
11	Δ 8-451-505-31	DEFLECTION YOKE (Y21RSA-X)	
12	* A-1405-418-A	MOUNTED PWB, C	
13	4-206-641-01	PT SCREW	
14	4-369-318-21	SPRING TENSION	
15	Δ 1-456-280-11	DEGAUSSING COIL	
16	4-058-870-01	SCREW, (4x 16) W(+) P TAPPING	
17	4-093-607-01	HOLDER DGC	

REF. NO.	PART NO.	DESCRIPTION	REMARK
18	1-825-039-11	SPEAKER (15x6.5CM)	
19	4-094-690-01	PIECE (A) 90 CONV CORRECT	
20	* A-1302-400-A	COMPLETE PWB, A	
21	Δ 1-453-329-41	TRANSFORMER ASSY FLYBACK (NX-4751/M3A4)	
22	8-598-623-00	TUNER BTP-AC421	
23	4-022-115-00	HOLDER AC CORD	
24	* 4-093-760-31	BRACKET TERMINAL	
25	Δ 1-783-083-11	CORD POWER (WITH FILTER)	
26	* 4-092-370-11	BRACKET FBT	
27	4-092-367-01	GUIDE LIGHT	
28	1-477-678-71	TOP SWITCH BLOCK	
29	* 4-093-771-01	COVER FRONT PANEL	
30	4-088-870-01	CUSHION DGC	
31	1-452-728-41	COIL NA ROTATION (RT-154)	
32	4-046-981-41	BRACKET SPEAKER	

A**SECTION 6
ELECTRICAL PARTS LIST****NOTE:**

The components identified by shading and mark \triangle are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- All resistors are in ohms
- F : nonflammable

CAPACITORS

- MF : μ F, PF : μ μF

COILS

- MMH : mH, UH : μ H

Note: Complete PWB A comes with Mounted PWB, C

REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
	* A-1302-400-A	COMPLETE PWB, A *****		C050	1-126-964-11	ELECT	10UF 20.00% 50V
				C052	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
	* 1-564-508-11	PLUG, CONNECTOR 5P		C053	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
	* 1-564-510-11	PLUG, CONNECTOR 7P		C054	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
	1-900-704-54	CONNECTOR ASSY, 3P		C055	1-136-167-00	FILM	0.15UF 5.00% 50V
	4-382-854-01	SCREW (M3X8), P, SW (+)		C056	1-126-933-11	ELECT	100UF 20.00% 16V
	4-382-854-21	SCREW (M3X14), P, SW (+)		C057	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
A015	* 4-055-304-01	HOLDER, LED		C058	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
A016	* 4-042-408-01	PIN, COATING LEAD		C060	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
A018	* 4-042-408-01	PIN, COATING LEAD		C061	1-164-173-11	CERAMIC CHIP	0.0039UF 10.00% 50V
		<CAPACITOR>		C062	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C001	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V	C063	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C002	1-126-935-11	ELECT	470UF 20.00% 16V	C064	1-126-961-11	ELECT	2.2UF 20.00% 50V
C003	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V	C065	1-126-962-11	ELECT	3.3UF 20.00% 50V
C004	1-126-933-11	ELECT	100UF 20.00% 16V	C067	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C005	1-126-933-11	ELECT	100UF 20.00% 16V	C069	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C006	1-126-933-11	ELECT	100UF 20.00% 16V	C070	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C008	1-126-947-11	ELECT	47UF 20.00% 25V	C072	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C010	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	C073	1-126-961-11	ELECT	2.2UF 20.00% 50V
C012	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C077	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C013	1-126-933-11	ELECT	100UF 20.00% 16V	C078	1-162-925-11	CERAMIC CHIP	68PF 5.00% 50V
C014	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C080	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C018	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C081	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C020	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C089	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C021	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V	C090	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C022	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C091	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V
C023	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V	C092	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C024	1-126-965-91	ELECT	22UF 20.00% 50V	C093	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C025	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C094	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C026	1-126-947-11	ELECT	47UF 20.00% 25V	C095	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C028	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C096	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C029	1-126-965-91	ELECT	22UF 20.00% 50V	C100	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C030	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C101	1-126-933-11	ELECT	100UF 20.00% 16V
C032	1-162-915-11	CERAMIC CHIP	10PF 0.50PF 50V	C102	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C034	1-162-915-11	CERAMIC CHIP	10PF 0.50PF 50V	C104	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C036	1-126-933-11	ELECT	100UF 20.00% 16V	C107	1-126-935-11	ELECT	470UF 20.00% 16V
C037	1-126-963-11	ELECT	4.7UF 20.00% 50V	C108	1-126-935-11	ELECT	470UF 20.00% 16V
C038	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	C109	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C041	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V	C112	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
C042	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C116	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C044	1-164-505-11	CERAMIC CHIP	2.2UF 16V	C118	1-126-965-91	ELECT	22UF 20.00% 50V
C046	1-162-969-11	CERAMIC CHIP	0.0068UF 10.00% 25V	C119	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
C048	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	C120	1-126-935-11	ELECT	470UF 20.00% 16V
C049	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V	C136	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
				C137	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
				C139	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
				C200	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
				C201	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
				C202	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
				C203	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V

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REF NO.	PART NO.	DESCRIPTION	REMARK
C204	1-130-495-00	MYLAR	0.1UF 5.00% 50V
C205	1-126-959-11	ELECT	0.47UF 20.00% 50V
C206	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C207	1-130-495-00	MYLAR	0.1UF 5.00% 50V
C208	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C209	1-126-959-11	ELECT	0.47UF 20.00% 50V
C210	1-126-968-11	ELECT	100UF 20.00% 50V
C211	1-126-963-11	ELECT	4.7UF 20.00% 50V
C213	1-115-339-11	CERAMIC CHIP	0.1UF 10.00% 50V
C214	1-126-942-61	ELECT	1000UF 20.00% 25V
C215	1-128-550-11	ELECT	2200UF 20.00% 50V
C216	1-126-965-91	ELECT	22UF 20.00% 50V
C217	1-126-942-61	ELECT	1000UF 20.00% 25V
C218	1-126-965-91	ELECT	22UF 20.00% 50V
C219	1-126-934-11	ELECT	220UF 20.00% 16V
C220	1-126-964-11	ELECT	10UF 20.00% 50V
C231	1-137-374-11	MYLAR	0.047UF 5.00% 50V
C232	1-137-374-11	MYLAR	0.047UF 5.00% 50V
C234	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C235	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C300	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V
C301	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C302	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C303	1-126-933-11	ELECT	100UF 20.00% 16V
C304	1-126-933-11	ELECT	100UF 20.00% 16V
C308	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C311	1-126-961-11	ELECT	2.2UF 20.00% 50V
C312	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C313	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C314	1-126-964-11	ELECT	10UF 20.00% 50V
C316	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V
C317	1-126-934-11	ELECT	220UF 20.00% 16V
C318	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C319	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C320	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V
C321	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C322	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C323	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C325	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C328	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C600	Δ 1-119-889-51	CERAMIC	4700PF 20.00% 250V
C602	Δ 1-165-538-11	MYLAR	0.1UF 10 275V
C605	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C606	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C609	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C610	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C611	1-117-751-11	ELECT(BLOCK)	220UF 20.00% 450V
C612	1-125-893-11	FILM	680PF 3.00% 1.5KV
C616	1-164-230-11	CERAMIC CHIP	220PF 5.00% 50V
C619	1-130-491-00	MYLAR	0.047UF 5.00% 50V
C621	1-126-963-11	ELECT	4.7UF 20.00% 50V
C622	Δ 1-119-894-51	CERAMIC	2200PF 20.00% 250V
C623	1-162-966-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C624	1-126-967-11	ELECT	47UF 20.00% 50V
C625	Δ 1-127-942-51	CERAMIC	330PF 10% 250V
C626	1-102-228-00	CERAMIC	470PF 10.00% 500V
C628	1-125-772-91	CERAMIC	1500PF 10.00% 2KV
C630	1-128-549-11	ELECT	3300UF 20.00% 35V
C632	1-126-953-11	ELECT	2200UF 20.00% 35V
C634	1-126-941-11	ELECT	470UF 20.00% 25V

REF NO.	PART NO.	DESCRIPTION	REMARK
C635	1-126-971-11	ELECT	470UF 20.00% 50V
C637	1-126-933-11	ELECT	100UF 20.00% 16V
C638	1-126-933-11	ELECT	100UF 20.00% 16V
C639	1-126-933-11	ELECT	100UF 20.00% 16V
C641	1-126-933-11	ELECT	100UF 20.00% 16V
C643	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V
C644	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C647	1-126-935-11	ELECT	470UF 20.00% 16V
C649	1-126-933-11	ELECT	100UF 20.00% 16V
C652	1-102-228-00	CERAMIC	470PF 10.00% 500V
C653	1-102-228-00	CERAMIC	470PF 10.00% 500V
C654	1-102-228-00	CERAMIC	470PF 10.00% 500V
C657	Δ 1-127-942-51	CERAMIC	330PF 10% 250V
C660	Δ 1-165-539-11	MYLAR	0.22UF 10 275V
C662	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C665	1-110-626-11	ELECT	330UF 20.00% 160V
C666	Δ 1-165-538-11	MYLAR	0.1UF 10 275V
C668	1-126-933-11	ELECT	100UF 20.00% 16V
C670	Δ 1-127-942-51	CERAMIC	330PF 10% 250V
C672	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C678	1-164-505-11	CERAMIC CHIP	2.2UF 16V
C680	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V
C682	1-115-466-91	ELECT	1000UF 20.00% 16V
C685	1-126-934-11	ELECT	220UF 20.00% 16V
C800	1-126-963-11	ELECT	4.7UF 20.00% 50V
C803	1-126-947-11	ELECT	47UF 20.00% 25V
C804	1-126-964-11	ELECT	10UF 20.00% 50V
C805	1-126-960-11	ELECT	1UF 20.00% 50V
C806	1-106-375-12	MYLAR	0.022UF 99% 200V
C807	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C808	1-102-244-00	CERAMIC	220PF 10.00% 500V
C809	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C810	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C811	1-126-933-11	ELECT	100UF 20.00% 16V
C822	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C825	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C826	1-164-227-11	CERAMIC CHIP	0.022UF 10.00% 25V
C828	1-126-933-11	ELECT	100UF 20.00% 16V
C830	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C831	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C832	1-164-230-11	CERAMIC CHIP	220PF 5.00% 50V
C833	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V
C835	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V
C837	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
C838	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C839	1-162-966-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C840	Δ 1-117-647-11	FILM	13000PF 3.00% 1.2KV
C841	1-107-846-11	FILM	0.1UF 5.00% 250V
C842	1-100-122-21	FILM	0.022UF 5% 400V
C844	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V
C845	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
C846	1-117-767-91	CERAMIC	330PF 10.00% 2KV
C847	1-107-364-11	MYLAR	0.01UF 10.00% 200V
C848	1-107-364-11	MYLAR	0.01UF 10.00% 200V
C849	1-106-375-12	MYLAR	0.022UF 99% 200V
C850	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C851	1-107-675-11	ELECT	1UF 20.00% 450V
C852	1-117-665-11	FILM	0.33UF 5.00% 250V
C854	1-126-948-11	ELECT	100UF 20.00% 35V
C855	1-107-894-11	ELECT	220UF 20.00% 35V

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C857	1-104-666-11	ELECT	220UF 20.00% 25V			<DIODE>	
C858	1-137-194-81	FILM	0.47UF 5.00% 50V				
C860	1-162-318-11	CERAMIC	0.001UF 10.00% 500V	D002	8-719-081-97	MMDL914T1	
C861	1-104-666-11	ELECT	220UF 20.00% 25V	D003	8-719-081-97	MMDL914T1	
C862	1-162-318-11	CERAMIC	0.001UF 10.00% 500V	D023	8-719-069-60	UDZSTE-179.1B	
C863	1-165-176-11	CERAMIC CHIP	0.047UF 10.00% 16V	D024	8-719-069-60	UDZSTE-179.1B	
C867	1-165-441-81	ELECT	33UF 20% 160V	D025	8-719-069-60	UDZSTE-179.1B	
C868	1-102-228-00	CERAMIC	470PF 10.00% 500V	D054	8-719-069-55	DIODE UDZSTE-175.6B	
C869	1-107-654-11	ELECT	33UF 20.00% 250V	D055	8-719-069-55	DIODE UDZSTE-175.6B	
C870	1-106-387-00	MYLAR	0.068UF 10.00% 200V	D056	8-719-081-97	MMDL914T1	
C876	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V	D057	8-719-081-97	MMDL914T1	
C877	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V	D058	8-719-081-97	MMDL914T1	
C878	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V	D059	8-719-081-97	MMDL914T1	
C879	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V	D060	8-719-069-55	DIODE UDZSTE-175.6B	
C900	1-117-720-11	CERAMIC CHIP	4.7UF 10V	D061	8-719-081-97	MMDL914T1	
C901	1-117-720-11	CERAMIC CHIP	4.7UF 10V	D062	8-719-069-55	DIODE UDZSTE-175.6B	
C902	1-126-957-11	ELECT	0.22UF 20.00% 50V	D063	8-719-081-97	MMDL914T1	
C903	1-126-935-11	ELECT	470UF 20.00% 16V	D064	8-719-069-55	DIODE UDZSTE-175.6B	
C904	1-126-957-11	ELECT	0.22UF 20.00% 50V	D065	8-719-069-55	DIODE UDZSTE-175.6B	
C905	1-162-970-11	CERAMIC CHIP	0.01UF 10.00% 25V	D066	8-719-908-03	GP08D	
C906	1-164-346-11	CERAMIC CHIP	1UF 16V	D068	8-719-069-55	DIODE UDZSTE-175.6B	
C907	1-164-346-11	CERAMIC CHIP	1UF 16V	D071	8-719-081-97	MMDL914T1	
C908	1-164-346-11	CERAMIC CHIP	1UF 16V	D072	8-719-081-97	MMDL914T1	
C909	1-164-346-11	CERAMIC CHIP	1UF 16V	D074	8-719-081-97	MMDL914T1	
C910	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D075	8-719-069-60	UDZSTE-179.1B	
C911	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D076	8-719-081-97	MMDL914T1	
C916	1-162-959-11	CERAMIC CHIP	330PF 5.00% 50V	D101	8-719-066-11	1PS184-115	
C917	1-162-959-11	CERAMIC CHIP	330PF 5.00% 50V	D103	8-759-157-40	UPC574J	
C918	1-164-346-11	CERAMIC CHIP	1UF 16V	D107	8-719-081-97	MMDL914T1	
C919	1-164-346-11	CERAMIC CHIP	1UF 16V	D108	8-719-069-55	DIODE UDZSTE-175.6B	
C922	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D109	8-719-069-55	DIODE UDZSTE-175.6B	
C923	1-126-947-11	ELECT	47UF 20.00% 25V	D200	8-719-062-51	1PS226-115	
C925	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D201	8-719-081-97	MMDL914T1	
C939	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D202	8-719-081-97	MMDL914T1	
C940	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D203	8-719-081-97	MMDL914T1	
C946	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D204	8-719-081-97	MMDL914T1	
C947	1-164-315-11	CERAMIC CHIP	470PF 5.00% 50V	D205	8-719-081-97	MMDL914T1	
C952	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	D208	8-719-081-97	MMDL914T1	
C955	1-127-715-91	CERAMIC CHIP	0.22UF 10% 16V	D211	8-719-062-51	1PS226-115	
C956	1-126-933-11	ELECT	100UF 20.00% 16V	D212	8-719-081-97	MMDL914T1	
C967	1-164-505-11	CERAMIC CHIP	2.2UF 16V	D213	8-719-081-97	MMDL914T1	
C972	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V	D214	8-719-081-97	MMDL914T1	
C973	1-126-964-11	ELECT	10UF 20.00% 50V	D600	8-719-081-97	MMDL914T1	
C974	1-126-964-11	ELECT	10UF 20.00% 50V	D602	6-500-481-31	DIODE AM01AV1	
C975	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V	D603	6-500-481-31	DIODE AM01AV1	
C976	1-126-935-11	ELECT	470UF 20.00% 16V	D604	8-719-077-77	D3SB60F3	
C1019	1-125-891-11	CERAMIC CHIP	0.47UF 10.00% 10V	D605	8-719-109-85	RD5.1ESB2	
C2602	1-102-114-00	CERAMIC	470PF 10.00% 50V	D617	6-500-567-11	DIODE 10ERB20-TA2B5	
C2631	1-102-228-00	CERAMIC	470PF 10.00% 500V	D618	8-719-063-70	D1NL20U	
C2636	1-126-972-11	ELECT	1000UF 20.00% 50V	D619	6-500-567-11	DIODE 10ERB20-TA2B5	
C2648	1-126-952-11	ELECT	1000UF 20.00% 35V	D621	8-719-312-10	RU4AM-T3	
		<CONNECTOR>		D622	8-719-085-37	11EQS10-TB5	
CN005	* 1-564-506-11	PLUG, CONNECTOR 3P		D623	6-500-567-31	DIODE 10ERB20-TB3	
CN200	* 1-564-507-11	PLUG, CONNECTOR 4P		D624	8-719-510-73	S3L20UF4	
CN601	* 1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P		D629	8-719-109-85	RD5.1ESB2	
CN602	* 1-580-843-11	PIN, CONNECTOR (POWER)		D633	8-719-923-86	MTZJ-T-77-15	
CN603 \triangle	1-508-786-13	PIN, CONNECTOR (5MM PITCH) 2P		D635	8-719-072-63	DIODE PDZ3.6B-115	
CN800	* 1-564-506-11	PLUG, CONNECTOR 3P		D637	8-719-072-70	MA2ZD14001S0	
CN901	* 1-766-296-21	CONNECTOR, DUAL SCART		D638	8-719-081-97	MMDL914T1	
CN904	* 1-564-508-11	PLUG, CONNECTOR 5P		D639	8-719-027-22	D3S6M-F	
				D800	8-719-081-97	MMDL914T1	
				D801	8-719-081-97	MMDL914T1	

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REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
D804	8-719-991-33	ISS133T-77		FB800	1-410-397-21	FERRITE	1.1UH
D805	8-719-991-33	ISS133T-77		FB901	1-469-869-21	FERRITE	0UH
D807	8-719-991-33	ISS133T-77		FB902	1-412-979-21	INDUCTOR	1UH
D808	8-719-991-33	ISS133T-77		FB903	1-412-979-21	INDUCTOR	1UH
D809	8-719-991-33	ISS133T-77		FB2607	1-410-397-21	FERRITE	1.1UH
D815	8-719-069-60	UDZSTE-179.1B					
D816	8-719-081-00	DIODE BY228/A52A					
D817	8-719-979-85	EGP20G					
D818	8-719-109-85	RD5.1ESB2		FH603	1-533-725-11	FUSE HOLDER	0A 0V
D819	6-500-567-31	DIODE 10ERB20-TB3					
D820	8-719-908-03	GP08D				<IC>	
D821	6-500-567-31	DIODE 10ERB20-TB3		IC001	6-705-430-51	IC TDA12027H/N1B0B0PJ	
D823	8-719-302-43	EL1Z		IC002	6-704-532-01	RPM7240-H5	
D824	8-719-302-43	EL1Z		IC003	8-759-678-07	CAT24WC16JI-TE1	
D827	8-719-302-43	EL1Z		IC200	6-703-475-01	IC AN5276T	
D829	8-719-069-55	DIODE UDZSTE-175.6B		IC601	6-704-263-01	IC STR-F6267S LF1357	
D830	8-719-081-97	MMDL914T1					
D900	8-719-069-60	UDZSTE-179.1B		IC602	6-703-479-01	IC PQ09RD1SJ00H	
D901	8-719-069-60	UDZSTE-179.1B		IC603	6-703-478-01	IC PQ018EF01SZH	
D902	8-719-069-55	DIODE UDZSTE-175.6B		IC604	8-759-231-53	TA7805S	
D903	8-719-069-55	DIODE UDZSTE-175.6B		IC605	6-705-063-01	IC SE135N-LF38	
D904	8-719-069-55	DIODE UDZSTE-175.6B		IC606	8-759-445-59	BA033T	
D905	8-719-069-60	UDZSTE-179.1B		IC607	8-759-832-05	IC BA18BC0FP-E2	
D906	8-719-069-55	DIODE UDZSTE-175.6B		IC800	8-759-356-16	NJM4556AD	
D907	8-719-069-55	DIODE UDZSTE-175.6B		IC801	6-703-708-01	IC LM2903DT	
D908	8-719-069-55	DIODE UDZSTE-175.6B		IC802	6-701-937-01	IC TJM4558CDT	
D910	8-719-069-55	DIODE UDZSTE-175.6B		IC804	6-703-470-01	IC STV9302A	
D911	8-719-069-55	DIODE UDZSTE-175.6B					
D912	8-719-069-55	DIODE UDZSTE-175.6B				<JACK>	
D913	8-719-069-55	DIODE UDZSTE-175.6B		J200	1-770-786-22	JACK	
D914	8-719-083-18	DIODE SPB-25MVWF		J903	1-770-329-13	JACK, PIN 3P	
D915	8-719-069-55	DIODE UDZSTE-175.6B					
D916	8-719-069-55	DIODE UDZSTE-175.6B				<CHIP CONDUCTOR>	
D918	8-719-069-55	DIODE UDZSTE-175.6B		JR001	1-216-864-11	SHORT CHIP	0
D920	8-719-069-55	DIODE UDZSTE-175.6B		JR002	1-216-864-11	SHORT CHIP	0
D922	8-719-069-55	DIODE UDZSTE-175.6B		JR003	1-216-864-11	SHORT CHIP	0
D927	8-719-069-55	DIODE UDZSTE-175.6B		JR004	1-216-864-11	SHORT CHIP	0
D928	8-719-069-60	UDZSTE-179.1B		JR005	1-216-864-11	SHORT CHIP	0
D929	8-719-069-60	UDZSTE-179.1B					
D930	8-719-069-55	DIODE UDZSTE-175.6B		JR006	1-216-864-11	SHORT CHIP	0
D931	8-719-157-97	RD3.6SB		JR008	1-216-864-11	SHORT CHIP	0
D932	8-719-157-97	RD3.6SB		JR009	1-216-864-11	SHORT CHIP	0
D933	8-719-069-60	UDZSTE-179.1B		JR011	1-216-864-11	SHORT CHIP	0
D934	8-719-069-60	UDZSTE-179.1B		JR012	1-216-864-11	SHORT CHIP	0
D2625	8-719-510-73	S3L20UF4					
		<CONNECTOR>		JR013	1-216-864-11	SHORT CHIP	0
DY800	* 1-580-798-11	CONNECTOR PIN (DY) 6P		JR014	1-216-864-11	SHORT CHIP	0
		<FUSE>		JR015	1-216-864-11	SHORT CHIP	0
F600	\triangle 1-576-232-21	FUSE	5A/250	JR016	1-216-864-11	SHORT CHIP	0
		<FERRITE BEAD>		JR017	1-216-864-11	SHORT CHIP	0
FB001	1-410-397-21	FERRITE	1.1UH	JR018	1-216-864-11	SHORT CHIP	0
FB002	1-414-594-11	FERRITE	0UH	JR019	1-216-864-11	SHORT CHIP	0
FB101	1-414-229-11	FERRITE	0UH	JR020	1-216-864-11	SHORT CHIP	0
FB603	1-410-397-21	FERRITE	1.1UH	JR021	1-216-864-11	SHORT CHIP	0
FB608	1-412-911-31	FERRITE	0UH	JR022	1-216-864-11	SHORT CHIP	0
				JR024	1-216-864-11	SHORT CHIP	0
				JR025	1-216-864-11	SHORT CHIP	0
				JR026	1-216-864-11	SHORT CHIP	0
				JR027	1-216-864-11	SHORT CHIP	0
				JR036	1-216-864-11	SHORT CHIP	0
				JR038	1-216-864-11	SHORT CHIP	0
				JR040	1-216-864-11	SHORT CHIP	0

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

A

REF NO.	PART NO.	DESCRIPTION	REMARK
JR041	1-216-864-11	SHORT CHIP	0
JR051	1-216-864-11	SHORT CHIP	0
JR093	1-216-864-11	SHORT CHIP	0
JR096	1-216-864-11	SHORT CHIP	0
JR097	1-216-864-11	SHORT CHIP	0
JR098	1-216-864-11	SHORT CHIP	0
JR111	1-216-864-11	SHORT CHIP	0
JR112	1-216-864-11	SHORT CHIP	0
JR200	1-216-864-11	SHORT CHIP	0
JR300	1-216-864-11	SHORT CHIP	0
JR600	1-216-864-11	SHORT CHIP	0
JR601	1-216-864-11	SHORT CHIP	0
JR602	1-216-864-11	SHORT CHIP	0
JR800	1-216-864-11	SHORT CHIP	0
JR805	1-216-864-11	SHORT CHIP	0
JR902	1-216-864-11	SHORT CHIP	0
JR903	1-216-864-11	SHORT CHIP	0
JR904	1-216-864-11	SHORT CHIP	0
JR905	1-216-864-11	SHORT CHIP	0
JR906	1-216-864-11	SHORT CHIP	0
JR907	1-216-864-11	SHORT CHIP	0
JR909	1-216-864-11	SHORT CHIP	0
JR1011	1-216-864-11	SHORT CHIP	0
JR1013	1-216-864-11	SHORT CHIP	0
JR1014	1-216-864-11	SHORT CHIP	0
JR1100	1-216-864-11	SHORT CHIP	0
JR1101	1-216-864-11	SHORT CHIP	0
JR1107	1-216-864-11	SHORT CHIP	0
JR1108	1-216-864-11	SHORT CHIP	0
JR1903	1-216-864-11	SHORT CHIP	0
<COIL>			
L003	1-414-856-11	INDUCTOR	10UH
L004	1-414-187-11	INDUCTOR	47UH
L005	1-414-856-11	INDUCTOR	10UH
L006	1-414-856-11	INDUCTOR	10UH
L007	1-414-856-11	INDUCTOR	10UH
L008	1-414-856-11	INDUCTOR	10UH
L009	1-414-856-11	INDUCTOR	10UH
L010	1-469-525-91	INDUCTOR	10UH
L011	1-469-525-91	INDUCTOR	10UH
L012	1-412-058-11	INDUCTOR	10UH
L013	1-469-525-91	INDUCTOR	10UH
L031	1-469-525-91	INDUCTOR	10UH
L032	1-469-525-91	INDUCTOR	10UH
L033	1-469-525-91	INDUCTOR	10UH
L035	1-469-525-91	INDUCTOR	10UH
L036	1-469-525-91	INDUCTOR	10UH
L100	1-414-857-11	INDUCTOR	100UH
L104	1-410-989-11	INDUCTOR	0.47UH
L106	1-414-187-11	INDUCTOR	47UH
L201	1-406-985-11	INDUCTOR	2.2MH
L600	1-412-533-21	INDUCTOR	47UH
L601	1-412-533-21	INDUCTOR	47UH
L602	1-412-529-11	INDUCTOR	22UH
L800	1-424-796-11	COIL, HORIZONTAL LINEARITY	
L802	1-406-679-11	INDUCTOR	22MH
L803	1-414-493-41	INDUCTOR	4.7MH
L805	1-408-947-00	INDUCTOR	2.2MH
L806	1-469-555-21	INDUCTOR	10UH

REF NO.	PART NO.	DESCRIPTION	REMARK
L900	1-469-525-91	INDUCTOR	10UH
L901	1-412-001-31	INDUCTOR	3.9UH
L902	1-414-187-11	INDUCTOR	47UH
L903	1-410-993-42	INDUCTOR	1UH
L904	1-410-993-42	INDUCTOR	1UH
L905	1-410-993-42	INDUCTOR	1UH
L906	1-410-993-42	INDUCTOR	1UH
L2601	1-412-525-31	INDUCTOR	10UH
<PHOTO COUPLER>			
PH600	\triangle 6-600-187-01	PHOTO COUPLER PC123Y22JOOF	
<IC LINK>			
PS602	\triangle 1-533-597-41	IC LINK	5A 90V
PS603	\triangle 1-533-597-41	IC LINK	5A 90V
PS604	1-533-597-41	IC LINK	5A 90V
PS605	\triangle 1-533-597-41	IC LINK	5A 90V
PS2601	\triangle 1-533-597-41	IC LINK	5A 90V
<TRANSISTOR>			
Q001	8-729-421-22	UN2211	
Q006	8-729-424-67	UN2216	
Q007	8-729-424-67	UN2216	
Q008	8-729-010-25	MSD601-RT1	
Q010	8-729-010-05	MSB709-RT1	
Q013	8-729-010-25	MSD601-RT1	
Q016	8-729-421-22	UN2211	
Q105	8-729-424-67	UN2216	
Q106	8-729-424-67	UN2216	
Q200	8-729-421-22	UN2211	
Q201	8-729-010-05	MSB709-RT1	
Q202	8-729-010-05	MSB709-RT1	
Q206	8-729-421-22	UN2211	
Q601	8-729-010-25	MSD601-RT1	
Q605	6-550-572-01	TRANSISTOR FN155	
Q608	8-729-010-25	MSD601-RT1	
Q609	8-729-010-25	MSD601-RT1	
Q800	8-729-010-25	MSD601-RT1	
Q801	8-729-010-25	MSD601-RT1	
Q802	8-729-010-25	MSD601-RT1	
Q803	8-729-140-50	2SC3209LK	
Q804	8-729-200-17	2SA1091-O	
Q805	6-550-410-01	TRANSISTOR 2SC5885	
Q806	8-729-010-25	MSD601-RT1	
Q807	8-729-010-05	MSB709-RT1	
Q808	8-729-053-33	IRF614-037	
Q814	8-729-010-25	MSD601-RT1	
Q900	8-729-010-05	MSB709-RT1	
Q901	8-729-424-67	UN2216	
Q902	8-729-424-67	UN2216	
Q903	8-729-010-05	MSB709-RT1	
Q908	8-729-424-67	UN2216	
Q909	8-729-424-67	UN2216	
Q8009	8-729-200-17	2SA1091-O	
Q8010	8-729-140-50	2SC3209LK	



REF NO.	PART NO.	DESCRIPTION	REMARK		
		<RESISTOR>			
R001	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R002	1-216-809-11	METAL CHIP	100	5%	1/10W
R003	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R004	1-216-809-11	METAL CHIP	100	5%	1/10W
R010	1-216-833-11	METAL CHIP	10K	5%	1/10W
R011	1-216-821-11	METAL CHIP	1K	5%	1/10W
R012	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R014	1-216-809-11	METAL CHIP	100	5%	1/10W
R015	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R018	1-216-809-11	METAL CHIP	100	5%	1/10W
R020	1-216-809-11	METAL CHIP	100	5%	1/10W
R023	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R024	1-216-809-11	METAL CHIP	100	5%	1/10W
R025	1-216-809-11	METAL CHIP	100	5%	1/10W
R026	1-216-809-11	METAL CHIP	100	5%	1/10W
R029	1-216-809-11	METAL CHIP	100	5%	1/10W
R030	1-216-809-11	METAL CHIP	100	5%	1/10W
R038	1-216-809-11	METAL CHIP	100	5%	1/10W
R039	1-216-809-11	METAL CHIP	100	5%	1/10W
R041	1-216-809-11	METAL CHIP	100	5%	1/10W
R042	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R044	1-216-834-11	METAL CHIP	12K	5%	1/10W
R045	1-216-809-11	METAL CHIP	100	5%	1/10W
R046	1-216-809-11	METAL CHIP	100	5%	1/10W
R048	1-216-809-11	METAL CHIP	100	5%	1/10W
R051	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R056	1-216-809-11	METAL CHIP	100	5%	1/10W
R058	1-216-809-11	METAL CHIP	100	5%	1/10W
R059	1-216-821-11	METAL CHIP	1K	5%	1/10W
R060	1-216-809-11	METAL CHIP	100	5%	1/10W
R061	1-216-819-11	METAL CHIP	680	5%	1/10W
R087	1-216-813-11	METAL CHIP	220	5%	1/10W
R088	1-216-816-11	METAL CHIP	390	5%	1/10W
R096	1-216-813-11	METAL CHIP	220	5%	1/10W
R097	1-216-813-11	METAL CHIP	220	5%	1/10W
R098	1-216-813-11	METAL CHIP	220	5%	1/10W
R099	1-216-813-11	METAL CHIP	220	5%	1/10W
R115	1-216-809-11	METAL CHIP	100	5%	1/10W
R116	1-216-809-11	METAL CHIP	100	5%	1/10W
R121	1-215-925-11	METAL OXIDE	22K	5%	3W
R122	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R124	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R125	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R128	1-216-864-11	SHORT CHIP	0		
R130	1-216-809-11	METAL CHIP	100	5%	1/10W
R142	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R150	1-216-809-11	METAL CHIP	100	5%	1/10W
R152	1-218-713-11	METAL CHIP	7.5K	0.5%	1/10W
R154	1-216-864-11	SHORT CHIP	0		
R200	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R201	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R202	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R203	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R204	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R205	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R207	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R208	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R210	1-216-835-11	METAL CHIP	15K	5%	1/10W
R211	1-216-835-11	METAL CHIP	15K	5%	1/10W
R212	1-216-864-11	SHORT CHIP	0		

REF NO.	PART NO.	DESCRIPTION	REMARK		
R213	1-216-835-11	METAL CHIP	15K	5%	1/10W
R214	1-216-835-11	METAL CHIP	15K	5%	1/10W
R215	1-216-833-11	METAL CHIP	10K	5%	1/10W
R216	1-216-833-11	METAL CHIP	10K	5%	1/10W
R217	1-249-411-11	CARBON	330	5%	1/4W
R218	1-216-295-91	SHORT CHIP	0		
R219	1-249-411-11	CARBON	330	5%	1/4W
R220	1-216-864-11	SHORT CHIP	0		
R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
R234	1-249-401-11	CARBON	47	5%	1/4W
R235	1-249-401-11	CARBON	47	5%	1/4W
R236	1-216-833-11	METAL CHIP	10K	5%	1/10W
R237	1-216-809-11	METAL CHIP	100	5%	1/10W
R238	1-216-809-11	METAL CHIP	100	5%	1/10W
R241	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R242	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R300	1-216-809-11	METAL CHIP	100	5%	1/10W
R301	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R303	1-216-861-11	METAL CHIP	2.2M	5%	1/10W
R304	1-216-851-11	METAL CHIP	330K	5%	1/10W
R307	1-216-864-11	SHORT CHIP	0		
R309	1-216-857-11	METAL CHIP	1M	5%	1/10W
R310	1-216-821-11	METAL CHIP	1K	5%	1/10W
R311	1-216-841-11	METAL CHIP	47K	5%	1/10W
R312	1-216-857-11	METAL CHIP	1M	5%	1/10W
R313	1-216-847-11	METAL CHIP	150K	5%	1/10W
R314	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R315	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R317	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R320	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R322	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W
R323	1-216-809-11	METAL CHIP	100	5%	1/10W
R324	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R331	1-216-809-11	METAL CHIP	100	5%	1/10W
R336	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R337	1-216-817-11	METAL CHIP	470	5%	1/10W
R338	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R339	1-216-809-11	METAL CHIP	100	5%	1/10W
R340	1-216-833-11	METAL CHIP	10K	5%	1/10W
R341	1-216-809-11	METAL CHIP	100	5%	1/10W
R355	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R356	1-216-864-11	SHORT CHIP	0		
R360	1-216-864-11	SHORT CHIP	0		
R363	1-216-864-11	SHORT CHIP	0		
R364	1-216-821-11	METAL CHIP	1K	5%	1/10W
R377	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R379	1-216-843-11	METAL CHIP	68K	5%	1/10W
R380	1-216-809-11	METAL CHIP	100	5%	1/10W
R384	1-216-809-11	METAL CHIP	100	5%	1/10W
R385	1-216-809-11	METAL CHIP	100	5%	1/10W
R386	1-216-809-11	METAL CHIP	100	5%	1/10W
R392	1-216-833-11	METAL CHIP	10K	5%	1/10W
R393	1-216-809-11	METAL CHIP	100	5%	1/10W
R394	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R395	1-216-845-11	METAL CHIP	100K	5%	1/10W
R400	1-260-288-11	CARBON	0.47	5%	1/2W
R401	1-260-288-11	CARBON	0.47	5%	1/2W
R405	1-260-288-11	CARBON	0.47	5%	1/2W
R406	1-260-127-11	CARBON	220K	5%	1/2W
R411	1-214-909-00	METAL	68K	1%	1/2W
R412	1-214-765-00	METAL	33K	1%	1/4W
R413	1-215-453-00	METAL	22K	1%	1/4W

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and mark Δ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
R414	1-260-336-11	CARBON	4.7K 5% 1/2W
R416	1-260-107-11	CARBON	4.7K 5% 1/2W
R420	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R421	1-216-833-11	METAL CHIP	10K 5% 1/10W
R423	1-216-864-11	SHORT CHIP	0
R424	1-218-899-11	METAL CHIP	150K 0.5% 1/16W
R602	1-216-833-11	METAL CHIP	10K 5% 1/10W
R609	1-216-833-11	METAL CHIP	10K 5% 1/10W
R612	1-215-429-00	METAL	2.2K 1% 1/4W
R616	1-220-820-31	CEMENTED	1.5 5% 10W
R619	1-216-363-21	METAL OXIDE	0.33 5% 2W
R620	1-216-363-21	METAL OXIDE	0.33 5% 2W
R621	1-249-409-11	CARBON	220 5% 1/4W
R624	1-215-429-00	METAL	2.2K 1% 1/4W
R625	1-216-864-11	SHORT CHIP	0
R627	1-249-385-11	CARBON	2.2 5% 1/4W
R631	1-249-425-11	CARBON	4.7K 5% 1/4W
R634	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R635	1-216-833-11	METAL CHIP	10K 5% 1/10W
R636	1-249-421-11	CARBON	2.2K 5% 1/4W
R639	1-220-820-31	CEMENTED	1.5 5% 10W
R645	1-218-899-11	METAL CHIP	150K 0.5% 1/16W
R646	1-218-851-11	METAL CHIP	1.5K 0.5% 1/10W
R647	1-216-821-11	METAL CHIP	1K 5% 1/10W
R650	Δ 1-240-917-91	METAL	8.2M 5% 1W
R655	1-216-809-11	METAL CHIP	100 5% 1/10W
R656	1-249-381-11	CARBON	1 5% 1/4W
R658	1-245-480-21	METAL	560K 1% 1/4W
R659	1-245-482-21	METAL	680K 1% 1/4W
R667	1-216-821-11	METAL CHIP	1K 5% 1/10W
R668	1-216-839-11	METAL CHIP	33K 5% 1/10W
R800	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R801	1-216-864-11	SHORT CHIP	0
R802	1-216-833-11	METAL CHIP	10K 5% 1/10W
R803	1-216-833-11	METAL CHIP	10K 5% 1/10W
R804	1-216-864-11	SHORT CHIP	0
R805	1-216-837-11	METAL CHIP	22K 5% 1/10W
R806	1-216-864-11	SHORT CHIP	0
R807	1-216-819-11	METAL CHIP	680 5% 1/10W
R808	1-216-833-11	METAL CHIP	10K 5% 1/10W
R809	1-216-833-11	METAL CHIP	10K 5% 1/10W
R810	1-216-833-11	METAL CHIP	10K 5% 1/10W
R812	1-216-837-11	METAL CHIP	22K 5% 1/10W
R813	1-216-837-11	METAL CHIP	22K 5% 1/10W
R814	1-216-809-11	METAL CHIP	100 5% 1/10W
R815	1-216-837-11	METAL CHIP	22K 5% 1/10W
R816	1-216-864-11	SHORT CHIP	0
R817	1-216-833-11	METAL CHIP	10K 5% 1/10W
R818	1-216-833-11	METAL CHIP	10K 5% 1/10W
R820	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R821	1-216-837-11	METAL CHIP	22K 5% 1/10W
R822	1-249-417-11	CARBON	1K 5% 1/4W
R823	1-245-468-21	METAL	180K 1% 1/4W
R824	1-216-839-11	METAL CHIP	33K 5% 1/10W
R825	1-243-606-71	METAL OXIDE	1K 5% 3W
R826	1-247-891-00	CARBON	330K 5% 1/4W
R827	1-216-369-00	METAL OXIDE	1 5% 2W
R828	1-243-606-71	METAL OXIDE	1K 5% 3W
R829	1-243-606-71	METAL OXIDE	1K 5% 3W
R830	1-260-332-51	CARBON	2.2K 5% 1/2W
R831	1-216-829-11	METAL CHIP	4.7K 5% 1/10W

REF NO.	PART NO.	DESCRIPTION	REMARK
R833	1-260-125-11	CARBON	150K 5% 1/2W
R834	1-245-468-21	METAL	180K 1% 1/4W
R835	1-260-125-11	CARBON	150K 5% 1/2W
R838	1-216-838-11	METAL CHIP	27K 5% 1/10W
R839	1-216-864-11	SHORT CHIP	0
R843	1-216-864-11	SHORT CHIP	0
R844	1-218-867-11	METAL CHIP	6.8K 5% 1/10W
R846	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R847	1-216-833-11	METAL CHIP	10K 5% 1/10W
R851	1-216-821-11	METAL CHIP	1K 5% 1/10W
R852	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R853	1-218-859-11	METAL CHIP	3.3K 0.5% 1/10W
R854	1-218-877-11	METAL CHIP	18K 0.5% 1/10W
R855	1-218-883-11	METAL CHIP	33K 0.5% 1/10W
R856	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R859	1-218-883-11	METAL CHIP	33K 0.5% 1/10W
R861	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R864	1-218-865-11	METAL CHIP	5.6K 0.5% 1/10W
R865	1-216-821-11	METAL CHIP	1K 5% 1/10W
R866	1-218-895-11	METAL CHIP	100K 0.5% 1/10W
R868	1-249-393-11	CARBON	10 5% 1/4W
R869	1-249-381-11	CARBON	1 5% 1/4W
R870	1-218-859-11	METAL CHIP	3.3K 0.5% 1/10W
R871	1-243-692-71	METAL OXIDE	220 5% 1W
R872	1-216-864-11	SHORT CHIP	0
R873	1-216-841-11	METAL CHIP	47K 5% 1/10W
R876	1-216-833-11	METAL CHIP	10K 5% 1/10W
R877	1-218-895-11	METAL CHIP	100K 0.5% 1/10W
R878	1-216-349-00	METAL OXIDE	1 5% 1W
R879	1-245-470-21	METAL	220K 1% 1/4W
R880	1-245-470-21	METAL	220K 1% 1/4W
R881	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R882	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R883	1-249-421-11	CARBON	2.2K 5% 1/4W
R887	1-216-837-11	METAL CHIP	22K 5% 1/10W
R888	1-218-887-11	METAL CHIP	47K 0.5% 1/10W
R889	1-243-531-71	METAL OXIDE	100 5% 3W
R890	1-215-910-00	METAL OXIDE	68 5% 3W
R891	1-249-385-11	CARBON	2.2 5% 1/4W
R893	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R895	1-218-859-11	METAL CHIP	3.3K 0.5% 1/10W
R902	1-216-821-11	METAL CHIP	1K 5% 1/10W
R904	1-216-821-11	METAL CHIP	1K 5% 1/10W
R905	1-216-840-11	METAL CHIP	39K 5% 1/10W
R906	1-216-817-11	METAL CHIP	470 5% 1/10W
R907	1-216-840-11	METAL CHIP	39K 5% 1/10W
R908	1-216-840-11	METAL CHIP	39K 5% 1/10W
R909	1-216-840-11	METAL CHIP	39K 5% 1/10W
R910	1-216-817-11	METAL CHIP	470 5% 1/10W
R911	1-216-805-11	METAL CHIP	47 5% 1/10W
R913	1-216-853-11	METAL CHIP	470K 5% 1/10W
R914	1-216-853-11	METAL CHIP	470K 5% 1/10W
R915	1-216-849-11	METAL CHIP	220K 5% 1/10W
R916	1-216-849-11	METAL CHIP	220K 5% 1/10W
R917	1-218-285-11	METAL CHIP	75 5% 1/10W
R918	1-216-805-11	METAL CHIP	47 5% 1/10W
R919	1-216-813-11	METAL CHIP	220 5% 1/10W
R920	1-216-849-11	METAL CHIP	220K 5% 1/10W
R921	1-216-849-11	METAL CHIP	220K 5% 1/10W
R922	1-218-285-11	METAL CHIP	75 5% 1/10W
R923	1-218-285-11	METAL CHIP	75 5% 1/10W
R924	1-216-853-11	METAL CHIP	470K 5% 1/10W



The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
R925	1-216-809-11	METAL CHIP	100 5% 1/10W
R926	1-216-809-11	METAL CHIP	100 5% 1/10W
R927	1-216-809-11	METAL CHIP	100 5% 1/10W
R928	1-218-285-11	METAL CHIP	75 5% 1/10W
R929	1-218-285-11	METAL CHIP	75 5% 1/10W
R930	1-218-285-11	METAL CHIP	75 5% 1/10W
R931	1-216-021-00	RES-CHIP	68 5% 1/10W
R940	1-216-849-11	METAL CHIP	220K 5% 1/10W
R941	1-216-849-11	METAL CHIP	220K 5% 1/10W
R945	1-216-833-11	METAL CHIP	10K 5% 1/10W
R946	1-216-833-11	METAL CHIP	10K 5% 1/10W
R947	1-216-839-11	METAL CHIP	33K 5% 1/10W
R948	1-216-839-11	METAL CHIP	33K 5% 1/10W
R949	1-216-833-11	METAL CHIP	10K 5% 1/10W
R950	1-216-833-11	METAL CHIP	10K 5% 1/10W
R951	1-216-013-00	RES-CHIP	33 5% 1/10W
R952	1-216-821-11	METAL CHIP	1K 5% 1/10W
R953	1-216-853-11	METAL CHIP	470K 5% 1/10W
R954	1-216-821-11	METAL CHIP	1K 5% 1/10W
R957	1-218-285-11	METAL CHIP	75 5% 1/10W
R967	1-216-853-11	METAL CHIP	470K 5% 1/10W
R970	1-216-853-11	METAL CHIP	470K 5% 1/10W
R992	1-216-817-11	METAL CHIP	470 5% 1/10W
R993	1-216-817-11	METAL CHIP	470 5% 1/10W
R2646	1-249-381-11	CARBON	1 5% 1/4W
R2647	1-249-429-11	CARBON	10K 5% 1/4W
R8003	1-216-809-11	METAL CHIP	100 5% 1/10W
R8004	1-216-809-11	METAL CHIP	100 5% 1/10W
R8005	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R8009	1-218-867-11	METAL CHIP	6.8K 5% 1/10W
R8010	1-245-464-21	METAL	120K 1% 1/4W
R8011	1-216-841-11	METAL CHIP	47K 5% 1/10W
R8012	1-216-841-11	METAL CHIP	47K 5% 1/10W
R8013	1-245-462-21	METAL	100K 1% 1/4W
R9005	1-216-864-11	SHORT CHIP	0
R9013	1-216-809-11	METAL CHIP	100 5% 1/10W
R9014	1-216-809-11	METAL CHIP	100 5% 1/10W
R9016	1-216-809-11	METAL CHIP	100 5% 1/10W
R9017	1-216-809-11	METAL CHIP	100 5% 1/10W
R9018	1-216-809-11	METAL CHIP	100 5% 1/10W
R9019	1-216-809-11	METAL CHIP	100 5% 1/10W
R9020	1-216-809-11	METAL CHIP	100 5% 1/10W
R9021	1-216-809-11	METAL CHIP	100 5% 1/10W
R9022	1-216-809-11	METAL CHIP	100 5% 1/10W
R9023	1-216-809-11	METAL CHIP	100 5% 1/10W
R9025	1-216-809-11	METAL CHIP	100 5% 1/10W
R9026	1-216-838-11	METAL CHIP	27K 5% 1/10W
R9027	1-216-838-11	METAL CHIP	27K 5% 1/10W
R9028	1-216-809-11	METAL CHIP	100 5% 1/10W
R9030	1-216-809-11	METAL CHIP	100 5% 1/10W
R9031	1-216-809-11	METAL CHIP	100 5% 1/10W
R9034	1-216-809-11	METAL CHIP	100 5% 1/10W
R9035	1-216-809-11	METAL CHIP	100 5% 1/10W
R9037	1-216-809-11	METAL CHIP	100 5% 1/10W
R9050	1-216-864-11	SHORT CHIP	0
R9053	1-218-285-11	METAL CHIP	75 5% 1/10W
R9057	1-216-809-11	METAL CHIP	100 5% 1/10W
R9062	1-249-417-11	CARBON	1K 5% 1/4W
R9063	1-211-981-11	METAL CHIP	33 0.5% 1/10W

REF NO.	PART NO.	DESCRIPTION	REMARK
		<VARIABLE RESISTOR>	
RV750	1-241-656-11	RES, ADJ, METAL FILM 110M	
		<RELAY>	
RY600	\triangle 1-755-198-12	RELAY, AC POWER	
		<SWITCH>	
S600	\triangle 1-571-433-31	SWITCH, PUSH (AC POWER)	
S800	1-572-707-11	SWITCH, LEVER	
SWF100	1-579-273-11	FILTER, SURFACE WAVE	
SWF101	1-767-873-11	FILTER, SURFACE WAVE	
		<TRANSFORMER>	
T600	\triangle 1-456-354-11	LINE FILTER COIL	
T602	\triangle 1-439-698-11	CONVERTER TRANSFORMER (SRT)	
T603	\triangle 1-456-354-11	LINE FILTER COIL	
T800	1-435-374-11	TRANSFORMER, FERRITE (HDT)	
T801	\triangle 1-453-329-41	TRANSFORMER ASSY FLY BACK (NX-4751/M3A4)	
		<THERMISTOR>	
THP600	\triangle 1-804-530-11	THERMISTOR, POSITIVE	
		<TEST PIN>	
TP02	1-536-354-00	POST PIN	
TP03	1-536-354-00	POST PIN	
TP04	1-536-354-00	POST PIN	
TP601	1-536-354-00	POST PIN	
		<TUNER>	
TU101	8-598-623-00	TUNER, FSS BTP-AC421	
		<VARISTOR>	
VDR600	1-804-995-11	VARISTOR	
		<CRYSTAL>	
X001	1-795-839-21	QUARTZ CRYSTAL UNIT	

	* A-1405-418-A	MOUNTED PWB (VAR), C	*****
	4-382-854-01	SCREW (M3X8), P, SW (+)	
		<CAPACITOR>	
C751	1-107-961-91	ELECT	10UF 20.00% 250V
C752	1-115-350-51	CERAMIC	0.0047UF 2KV
C754	1-107-651-11	ELECT	4.7UF 20.00% 250V

The components identified by shading
and mark \triangle are critical for safety.
Replace only with part number specified.

C

REF NO.	PART NO.	DESCRIPTION	REMARK		
C781	1-107-651-11	ELECT	4.7UF	20.00%	250V
C782	1-102-074-00	CERAMIC	0.001UF	10.00%	50V
C783	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C786	1-162-964-11	CERAMIC CHIP	0.001UF	10.00%	50V
C787	1-164-645-11	CERAMIC	1000PF	10.00%	500V
C788	1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C789	1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V
C790	1-162-923-11	CERAMIC CHIP	47PF	5.00%	50V

<CONNECTOR>

CN701	* 1-564-510-11	PLUG, CONNECTOR 7P
CN703	* 1-564-508-11	PLUG, CONNECTOR 5P
CN704	1-695-915-11	TAB (CONTACT)
CN705	1-695-915-11	TAB (CONTACT)

<DIODE>

D750	8-719-908-03	GP08D
D754	8-719-970-83	HSS82-TJ
D755	8-719-970-83	HSS82-TJ
D756	8-719-970-83	HSS82-TJ
D780	8-719-991-33	ISS133T-77
D781	8-719-991-33	ISS133T-77
D782	8-719-069-55	DIODE UDZSTE-175.6B

<IC>

IC751	6-703-482-01	IC TDA6108AJF/N1
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<JACK>

J751	\triangle 1-451-544-11	SOCKET, CRT
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<COIL>

L780	1-410-667-31	INDUCTOR	22UH
L781	1-414-186-31	INDUCTOR	33UH
L782	1-414-186-31	INDUCTOR	33UH
L783	1-414-186-31	INDUCTOR	33UH

<u>REF NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>REMARK</u>		
<RESISTOR>					
R713	1-216-864-11	SHORT CHIP	0		
R752	1-216-819-11	METAL CHIP	680	5%	1/10W
R753	1-216-819-11	METAL CHIP	680	5%	1/10W
R754	1-216-819-11	METAL CHIP	680	5%	1/10W
R756	1-219-746-11	METAL	1K	5%	1/2W
R757	1-219-746-11	METAL	1K	5%	1/2W
R758	1-219-746-11	METAL	1K	5%	1/2W
R763	1-260-087-11	CARBON	100	5%	1/2W
R764	1-260-087-11	CARBON	100	5%	1/2W
R765	1-260-087-11	CARBON	100	5%	1/2W
R773	1-260-132-11	CARBON	560K	5%	1/2W
R774	1-215-912-11	METAL OXIDE	150	5%	3W
R780	1-260-131-11	CARBON	470K	5%	1/2W
R781	1-243-950-71	RES, OXIDE METAL FILM	0.56		
R783	1-260-087-11	CARBON	100	5%	1/2W
R794	1-249-377-11	CARBON	0.47	5%	1/4W
R795	1-260-352-11	CARBON	100K	5%	1/2W

<VARIABLE RESISTOR>

RV750	1-241-656-11	RES, ADJ, METAL FILM 110M
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<ACCESSORIES AND PACKING MATERIALS>

* 4-088-869-01	BAG, PROTECTION
* 4-096-211-01	INDIVIDUAL CARTON
* 4-096-212-01	CUSHION, UPPER
* 4-096-215-01	CUSHION, LOWER
4-098-284-11	MANUAL, INSTRUCTION

<REMOTE COMMANDER BATTERY COVER>

1-477-861-11	STANDARDTYPE COMMANDER RM-W100
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SONY®

4-098-284-11(1)



409828411

FD Trinitron Colour Television

Instruction Manual

GB

Инструкции за експлоатация

BG

Návod k obsluze

CZ

Kezelési útmutató

HU

Instrukcja obsługi

PL

Инструкция по эксплуатации

RU

Návod na obsluhu

SK

KV-21CL5K

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Introduction

Thank you for choosing this Sony FD Trinitron Colour Television.

Before operating the TV, please read this manual thoroughly and retain it for future reference.

Symbols used in the manual:










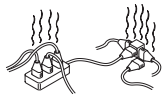

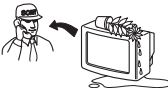

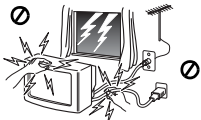
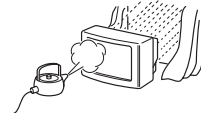
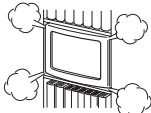
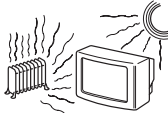
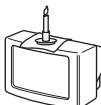

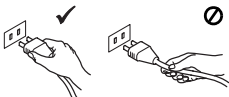




-  Important information.
-  Information on a feature.
- 1,2...Sequence of instructions.
-  Shaded buttons on the remote control show you the buttons you have to press to follow the sequence of the instructions.
-  Informs you of the result of instructions.

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Safety Information

 <p>This set is to operate on a 220-240V AC supply only. Take care not to connect too many appliances to the same power socket as this could result in fire or electric shock.</p>	 <p>For environmental and safety reasons, it is recommended that the TV set is not left in standby mode when not in use. Disconnect from the mains.</p>	 <p>Never push objects of any kind into the set as this could result in a fire or electric shock. Never spill liquid of any kind on the set. If any liquid or solid object does fall through, do not operate the TV. Have it checked immediately by qualified personnel.</p>
 <p>Do not open the cabinet and the rear cover of the TV. Refer to qualified service personnel only.</p>	 <p>For your own safety, do not touch any part of the TV, power lead or aerial lead during lightning storms.</p>	 <p>To prevent fire or shock hazard, do not expose the TV to rain or moisture.</p>
 <p>Do not cover the ventilation openings of the TV. For ventilation, leave a space of at least 10cm all around the set.</p>	 <p>Never place the TV in hot, humid or excessively dusty places. Do not install the TV where it may be exposed to mechanical vibrations.</p>	 <p>To prevent fire, keep inflammable objects or naked lights (e.g. candles) away from the TV.</p>
 <p>Clean the screen and cabinet with a soft, lightly dampened cloth. Do not use any type of abrasive pad, alkaline cleaner, scouring powder or solvent, such as alcohol or benzene, or antistatic spray. As a safety precaution, unplug the TV before cleaning it.</p>	 <p>Pull out the power lead by the plug. Do not pull on the power lead itself.</p>	 <p>Take care not to place heavy objects on the power lead as this could result in damage. We recommend you wind any excess lead around the holders provided on the rear of the TV.</p>
 <p>Place the TV on a secure stable stand. Do not allow children to climb on to it. Do not place the TV on its side or face up.</p>	 <p>Unplug the power lead before moving the TV. Avoid uneven surfaces, quick steps or excessive force. If the set has been dropped or damaged, have it checked immediately by qualified service personnel.</p>	 <p>Do not cover the ventilation openings of the TV with items such as curtains or newspapers, etc.</p>

Overview of Remote Control Buttons

Displaying on screen information

Press to display all on-screen indications. Press again to cancel.

Muting the sound

Press to mute TV sound. Press again to restore the sound.

Selecting input source

Press repeatedly until the desired input symbol of the source appears on the TV screen.

This button only works in Teletext mode.

Function A/B associated to this button does not work with this TV.

Selecting channels

Press to select channels.

For double-digit programme numbers, enter the second digit within 3 seconds.

or

Press -/-- and then the first and second digit.

If you enter an incorrect first digit, this should be corrected by entering another digit (0-9) and then selecting -/-- button again to enter the programme number of your choice.

On timer

Set TV to switch on automatically.

Sleep timer

Set TV to switch off automatically.

This button does not work on this set.


Adjusting TV volume

Press to adjust the volume of the TV.

Selecting sound mode

Press repeatedly to change the sound mode.

To temporarily switch off TV

Press to temporarily switch off TV (the standby indicator  on TV lights up). Press again to switch on TV from standby mode.

To save energy we recommend switching off completely when TV is not in use.



After 15 minutes without a signal and without any button being pressed, the TV switches automatically into standby mode.

Selecting TV mode

Press to switch off teletext or video input.

Back to the channel last watched

Press to watch the last channel selected (watched for at least 5 seconds).

Selecting channels

Press to select the next or previous channel.

Displaying the menu system

Press to display the menu on the TV screen. Press again to remove the menu display from the TV screen.

Menu selection

- ▲ Scroll Up
- ▼ Scroll Down
- ◀ Previous menu or selection
- ▶ Next menu or selection
- ☑ Confirm your selection

Selecting Teletext

Press to switch on teletext.

Selecting screen format

Press to view programmes in 16:9 mode. Press again to return to 4:3 mode.

Selecting picture mode

Press repeatedly to change the picture mode.

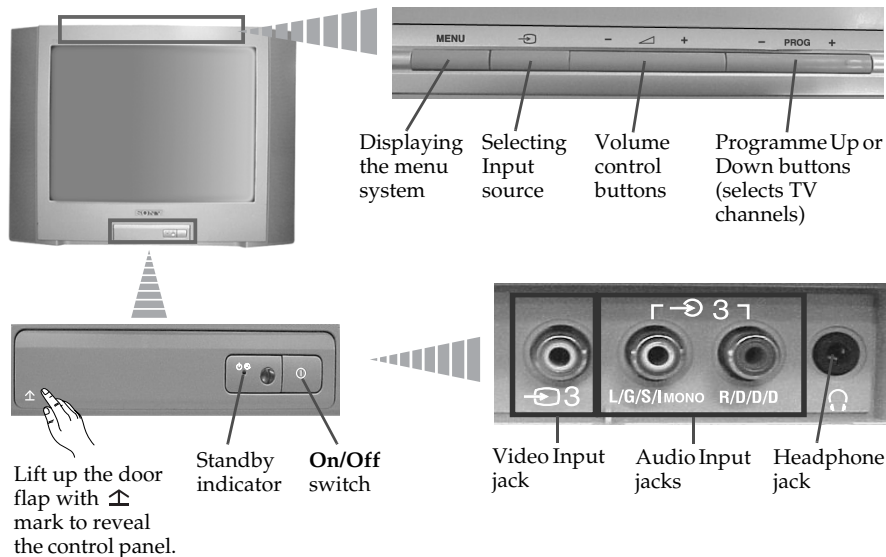


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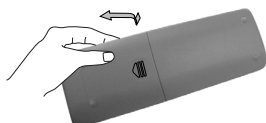
Besides TV functions, all coloured buttons as well as green symbols are also used for Teletext operation. For more details, please refer to "Teletext" section of this instruction manual (see page 16).

Overview of TV Buttons



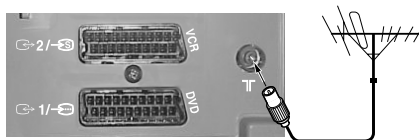
Inserting Batteries into the Remote Control

- ⚠** Make sure you insert the supplied batteries using the correct polarities. Always remember to dispose of used batteries in an environmental friendly way.

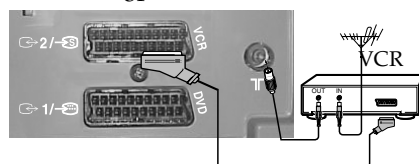


Connecting an Aerial and VCR

- i** Connecting cables are not supplied.



OR






Scart lead is optional.

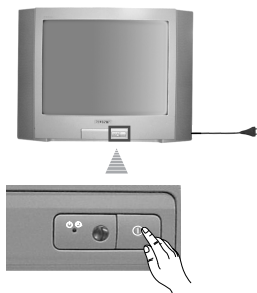
- ⚠** For more details of VCR connection, please refer to the section "Connecting Optional Equipment" of this instruction manual (see page 17).



Switching On the TV and Automatically Tuning



i The first time you switch on your TV, a sequence of menu screens appear on the TV enabling you to: 1) choose the language of the menu screen, 2) choose the country in which you wish to operate the TV, 3) search and store all available channels (TV Broadcast), 4) change the order in which the channels (TV Broadcast) appear on the screen and 5) adjust the picture slant.

However, if you need to change any of these settings at a later date, you can do that by selecting the appropriate option in the  (Set Up) or  (Channel Set Up) menu.



- 1** Connect the TV plug to the mains socket (220-240 V AC, 50 Hz). Press  On/Off button on the TV set to switch on the TV. The first time you switch on the TV, a **Language** menu displays automatically on the TV screen.



- 2** Press  +/- button on the top control panel to select the language, then press  to confirm your selection. From now on all menus will appear in the selected language.



Language
 Svenska
Norsk
English
Nederlands
 Français
Select language
Select [-<+] Confirm [->]


GB

- 3** The **Country** menu appears automatically on the TV screen. Press  +/- button to select the country in which you will operate the TV set, then press  to confirm your selection.




- If the country in which you want to use the TV set does not appear in the list, select "-" instead of a country.
- In order to avoid wrong teletext characters for Cyrillic languages we recommend to select Russia in the case that your own country does not appear in the list.

Country
 Sverige
Norge
-
Italia
 Schweiz/Suisse/Svizzera
Select Country
Select [-<+] Confirm [->]

- 4** Ensure the aerial is connected as instructed, then press  to confirm. The TV automatically starts searching and storing all available broadcast channels for you.



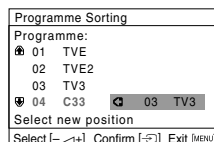
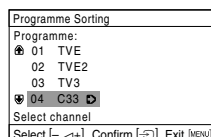
- This procedure could take some minutes. Please be patient and do not press any buttons, otherwise automatic tuning will not be completed.
- If no channels were found during the auto tuning process, a new menu appears automatically on the screen asking you to connect the aerial. Please connect the aerial (see page 6) and press . The auto tuning process will start again.

Initial Set Up
First please connect aerial
Do you want to start automatic tuning?
Yes
No
Select [-<+] Confirm [->] End [MENU]
Auto Tuning
No channel found
Please connect aerial
OK
Confirm [->] End [MENU]

continued...

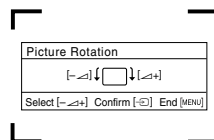
5 After all available channels are captured and stored, the **Programme Sorting** menu appears automatically on the screen enabling you to change the order in which the channels appear on the screen.


- a) If you wish to keep the broadcast channels in the tuned order, press MENU.
- b) If you wish to store the channels in a different order:
 - 1 Press \triangleleft \div \rightarrow to select the programme number with the channel (TV Broadcast) you wish to rearrange, then press \rightarrow .
 - 2 Press \triangleleft \div \rightarrow to select the new programme number position for your selected channel (TV Broadcast), then press \rightarrow .
 - 3 Repeat steps b) 1 and b) 2 if you wish to change the order of the other channels.




6 Because of the earth's magnetism, the picture might slant. The **Picture Rotation** menu allows you to correct the picture slants if it is necessary.

- a) If it is not necessary, press \rightarrow .
- b) If it is necessary, press \triangleleft \div \rightarrow to correct any slant of the picture. Finally press \rightarrow to store.



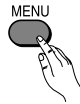
-  • To allow this menu to appear again, press and hold MENU button at top control panel for about 5 seconds.
- The MENU, \square and \blacktriangle \blacktriangleright \blacktriangledown \blacktriangleleft buttons on the remote control can also be used for the operations above.

 Your TV is now ready for use.

Introducing and Using the Menu System

i Your TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the Remote Control to operate the menu system:

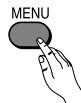
1 Press **MENU** to switch the menu on.



- 2** • To highlight the desired menu or option, press **↓** or **↑**.
• To enter to the selected menu or option, press **→**.
• To return to the last menu or option, press **←**.
• To alter settings of your selected option, press **↓/↑/←/→** or **→**.
• To confirm and store your selection, press **↵**.

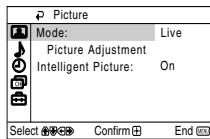
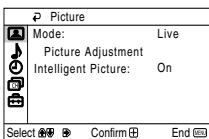


3 Press **MENU** to remove the menu from the screen.



Picture

GB



The “Picture” menu allows you to alter the picture adjustments.











To do this:


After selecting the item you want to alter, press **→**, then press **↓/↑/←/→** repeatedly to adjust it and finally press **↵** to store the new adjustment.

This menu also allows you to customize the picture mode based on the programme you are watching:

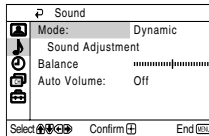
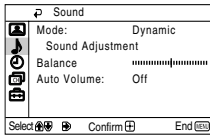
Mode	Live (for enhanced picture contrast and sharpness).	
	Movie (for a finely detailed picture).	
	Game (for a picture from game).	
	Personal (for your own custom settings).	
Picture Adjustment	Contrast	Press ↓ or ← to reduce picture contrast. Press ↑ or → to enhance picture contrast.
	Brightness	Press ↓ or ← to darken the picture. Press ↑ or → to brighten the picture.
	Colour	Press ↓ or ← to decrease colour intensity. Press ↑ or → to increase colour intensity.

continued...

Hue		Press  or  to decrease the green tones. Press  or  to increase the green tones.
 Hue can only be adjusted for NTSC colour signal (e.g. USA video tapes).		
Sharpness		Press  or  to soften the picture. Press  or  to sharpen the picture.
Reset		Select  to reset the picture to the factory preset levels.
Intelligent Picture	On/Off	Select to optimize the picture quality. E.g. reduce noise level when signal is weak.







 If any changes are made to “Picture Adjustment”, “Mode” will switch automatically to “Personal” and the new setting will be stored as “Personal”.














Sound



The “Sound” menu allows you to alter the sound adjustments.

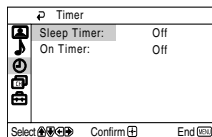
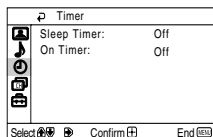
To do this:

After selecting the item you want to alter, press , then press // or  repeatedly to adjust it and finally press  to store it.

Mode	Dynamic (dynamic and clear sound that emphasizes both the low and high tones). Drama (sound that emphasizes voice and high tones). Soft (soft, natural and relaxing sound). Personal (flat and smooth sound that can be customized by users).	
Sound Adjustment	Treble	Press  or  to decrease higher-frequency sounds. Press  or  to increase higher-frequency sounds.
	Bass	Press  or  to decrease lower-frequency sounds. Press  or  to increase lower-frequency sounds.
	Reset	Select  to reset the sound to the factory preset.
Balance	Press  or  to emphasize the left speaker. Press  or  to emphasize the right speaker.	
Auto Volume	On/Off Volume level of the channels will stay the same, independent of the broadcast signal (e.g., in the case of advertisements).	

GB

Timer





The “Timer” menu allows you to alter the timer adjustments.


Sleep Timer

The “Sleep Timer” option in the “Timer” menu allows you to select a time period for the TV to switch itself automatically into the standby mode.

To do this:

After selecting the option, press , then press  or  to set the time period delay (max. of 1 hour 30 minutes) and finally press  to store.








- While watching the TV, you can press the  button on the remote control to display the time remaining.
- One minute before the TV switches itself into standby mode, “TV will turn off soon” is displayed on the TV screen automatically.


On Timer

The “On Timer” option in the “Timer” menu allows you to select a time period for the TV to switch itself automatically on from standby mode.

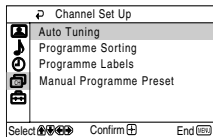
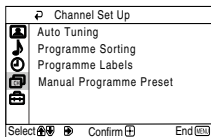
To do this:

After selecting the option, press , then press  or  to set the time period delay (max. of 12 hours) and finally press  to store. Finally press the standby button  on the remote control. After the selected length of time, the TV switches on automatically and “On Timer” will appear on the screen.



- The standby indicator  on the TV set lights up in amber to indicate that “On Timer” is active.
- Any loss of power will cause these settings to be cleared.
- If no buttons are pressed for more than one hour after the TV is turned on using the “On Timer”, the TV automatically goes into standby mode.

Channel Set Up




The “Channel Set Up” menu allows you to preset channels on this TV.

Auto Tuning

The “Auto Tuning” option in the “Channel Set Up” menu allows you to automatically search and store all available TV channels.


To do this:

After selecting the option, press  and then proceed in the same way as in step 4 of the section “Switching On the TV and Automatically Tuning” (see page 7).

Programme Sorting

The “Programme Sorting” option in the “Channel Set Up” menu allows you to change the order in which the channels (TV Broadcast) appear on the screen.

To do this:










After selecting the option, press  and then proceed in the same way as in step 5b) of the section “Switching On the TV and Automatically Tuning” (see page 8).

GB

Programme Labels

The “Programme Labels” option in the “Channel Set Up” menu allows you to name a channel using up to five characters (letters or numbers).

To do this:

- 1 After selecting the option, press . Press  or  to select the programme number with the channel you wish to name, then press .
- 2 Press . With the first element of the label column highlighted, press  or  to select a letter or number (select “_” for a blank), then press  to confirm this character. Select the other four characters in the same way. Finally press  to store.






continued...

Manual Programme Preset

The “Manual Programme Preset” option in the “Channel Set Up” menu allows you to:












- a) Preset channels or a video input source one by one to the programme order of your choice.

To do this:

- 1 After selecting the “Manual Programme Preset” option, press . Highlight the **Programme** option and press . Press  or  to select a programme number on which you want to preset the channel (for VCR, select programme number “0”), then press .







The following option is only available depending on the country you have selected in the “Language/Country” menu.

- 2 After selecting the **System** option, press . Press  or  to select the TV Broadcast system (**B/G** for western European countries or **D/K** for eastern European countries), then press .
- 3 After selecting the **Channel** option, press . Press  or  to select the channel tuning (**C** for terrestrial channels or **S** for cable channels). Next press . After that, press the number buttons to directly enter the channel number of the TV Broadcast. If you do not know the channel number, press  or  to search for it. When you tune the desired channel, press  twice to store.

Repeat all the above steps to tune and store more channels.





- b) Normally the automatic fine tuning (AFT) will give the best possible picture, however you can manually fine tune the TV to obtain a better picture if the picture is distorted.

To do this:

While watching the channel (TV Broadcast) you wish to fine tune, select the **AFT** option and press . Next press  or  to adjust the fine tuning between -15 and +15. Finally press  twice to store.

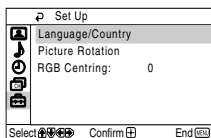
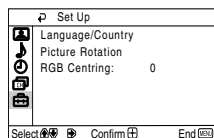
- c) Skip any unwanted programme numbers when they are selected with the PROG +/- button.

To do this:

Highlighting the **Programme** option, press **PROG +/-** to select the programme number you want to skip. When the programme you want to skip appears on the screen, select the **Skip** option and press . Next press  or  to select **Yes**. Finally press  twice to confirm and store.

*To cancel this function afterwards, select **No** instead of **Yes** in the step above.*

Set Up




The “Set Up” menu allows you to alter various options on this TV.

Language/ Country

The “Language/Country” option in the “Set Up” menu allows you to select the language that the menus are displayed in.







To do this:

After selecting the option, press  and then proceed in the same way as in steps 2 and 3 of the section “Switching On the TV and Automatically Tuning” (see page 7).

Picture Rotation

Because of the earth’s magnetism, the picture might slant. In this case, you can correct the picture slant by using the option “Picture Rotation” in the “Set Up” menu.





To do this:

After selecting the option, press . Press  or  ( or ) to correct any slant of the picture. Finally press  to store.

RGB Centring

When connecting an RGB source, such as a “PlayStation”, you may need to readjust the horizontal position of the picture. In that case, you can readjust it through the “RGB Centring” option in the “Set Up” menu.

To do this:

While watching an RGB source, select the “RGB Centring” option and press . Press  or  to adjust the centre of the picture between -10 and +10. Finally press  to confirm and store.

GB

Teletext

i Teletext is an information service transmitted by most TV stations. The index page of the Teletext service (usually page 100) gives you information on how to use the service. To operate Teletext, use the remote control buttons as indicated below.

A Be sure to use a channel (TV Broadcast) with a strong signal, otherwise Teletext errors may occur.


To switch on Teletext:

After selecting the TV channel which carries the Teletext service you wish to view, press .

To select a Teletext page:


Input 3 digits for the page number, using the numbered buttons.

- If you have made a mistake, retype the correct page number.
- If the counter on the screen continues searching, it is because this page is not available. In that case, input another page number.



TELETEXT	
Index	25
Programme	153
News	101
Sport	98
Weather	

To check the contents of a Teletext service:

Press .


To access the next or preceding page:

Press  or .


To superimpose teletext on to the TV:

Whilst you are viewing Teletext, press . Press it again to cancel Teletext mode.



To freeze a teletext page:

Some Teletext pages have sub-pages which follow on automatically. To stop them, press . Press it again to cancel the freeze.



To reveal concealed information (e.g., answer to a quiz):

Press . Press it again to conceal the information.


To enlarge the Teletext display:

Press . Each time you press , the Teletext display changes as follows: Enlarge upper half → Enlarge lower half → Normal size.

To stand by for a Teletext page while watching a TV program.

- 1 Enter the Teletext number that you want to refer to, then press .
- 2 When the page number is displayed, press  to show the Text.

To switch off Teletext:

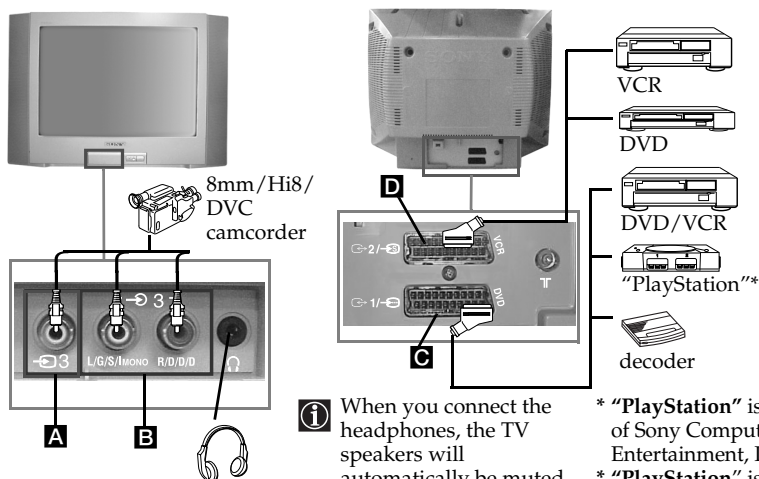
Press .

Fastext

i Fastext service lets you access pages with one push of a button. While you are in Teletext mode and Fastext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the colour button (red, green, yellow or blue) to access the corresponding page.

Connecting Optional Equipment

i Using the following instructions, you can connect a wide range of optional equipment to your TV set (connecting cables are not supplied).



i When you connect the headphones, the TV speakers will automatically be muted.

* "PlayStation" is a product of Sony Computer Entertainment, Inc.
 * "PlayStation" is a trademark of Sony Computer Entertainment, Inc.

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Connecting a VCR:

To connect a VCR, please refer to the section "Connecting an aerial and VCR" of this instruction manual. We recommend you connect your VCR using a Scart lead. If you do not have a Scart lead, tune in the VCR test signal to the TV programme number "0" by using the "Manual Programme Preset" option (for details on how to manually programme these presets, see page 14, step a).

Refer to your VCR instruction manual to find out how to find the output channel of your VCR.

Using Optional Equipment

- 1 Connect your equipment to the designated TV socket, as indicated above.
- 2 Switch on the connected equipment.
- 3 To watch the picture of the connected equipment, press repeatedly until the correct input symbol appears on the screen.

Symbol

Input Signals

- | | |
|--|--|
| | • Audio / video input signal through the Scart connector C |
| | • RGB input signal through the Scart connector C . This symbol appears only if a RGB source has been connected. |
| | • Audio / video input signal through the Scart connector D . |
| | • S Video input signal through the Scart connector D . |
| | • Video input signal through the phono socket A and Audio input signal through B . |

- 4 Press button on the remote control to return to the normal TV picture.

Specifications

TV system:

Depending on your country selection:
B/G/H, D/K

Colour system:

PAL, SECAM
NTSC 3.58, 4.43 (only Video In)



Channel Coverage:



VHF: E2-E12
UHF: E21-E69
CATV: S1-S20
HYPER: S21-S41
D/K: R1-R12, R21-R69

Picture Tube:




Flat Display FD Trinitron

Rear Terminals

 1/  21-pin Scart connector
(CENELEC standard) including
audio/video input, RGB input,
TV audio/video output.

 2/  21-pin Scart connector
(CENELEC standard) including
audio/video input, S video
input, monitor audio/video
output.

Front Terminals

 3 video input – phono jack
 3 audio input – phono jacks
 headphones jack

Sound Output:

2 x 10 W (music power)
2 x 5 W (RMS)

Power Consumption:

66 W

Standby Power Consumption:

< 1 W

Dimensions (w x h x d):

Approx. 630 x 460 x 492 mm

Weight:

Approx. 25 kg

Accessories supplied:

1 Remote Control (RM-W100)
2 Batteries (IEC designated)


Other features:








- Teletext, Fasttext, TOPtext
- Sleep Timer
- On Timer


Design and specifications are subject to change without notice.

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Troubleshooting

 Here are some simple solutions to the problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark) and no sound.	<ul style="list-style-type: none"> • Check the aerial connection. • Plug the TV in and press the  button on the front of TV. • If the standby indicator  is on, press  button on the remote control. • Press the  button on the front of the TV to switch off the TV for about 5 seconds, then switch it on again.
Poor or no picture (screen is dark), but good sound.	<ul style="list-style-type: none"> • Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to the factory settings (see page 9).
No picture or no menu information from equipment connected to the Scart connector.	<ul style="list-style-type: none"> • Check that the optional equipment is on and press  repeatedly on the remote control until the correct input symbol is displayed on the screen (see page 17).
Good picture, no sound.	<ul style="list-style-type: none"> • Press the  + button on the remote control. • Check that headphones are not connected.
No colour on colour programmes.	<ul style="list-style-type: none"> • Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to factory settings (see page 9).
Distorted picture when changing programmes or selecting teletext.	<ul style="list-style-type: none"> • Turn off any equipment connected to the Scart connector on the rear of the TV.
Wrong characters appear when viewing teletext.	<ul style="list-style-type: none"> • Using the menu system, enter the "Language/Country" option in the "Set Up" menu and select the country in which you operate the TV set. For Cyrillic languages, we recommend to select Russia in the case that your own country does not appear in the list (see page 15).
Picture slanted.	<ul style="list-style-type: none"> • Using the menu system, select the "Picture Rotation" option in the "Set Up" menu to correct the picture slant (see page 15).
Noisy picture when viewing a TV channel.	<ul style="list-style-type: none"> • Using the menu system, select the "Manual Programme Preset" menu and adjust Fine Tuning (AFT) to obtain better picture reception (see page 14). • Using the menu system, select the "Intelligent Picture" option in the "Picture" menu and select "On" to reduce the noise in the picture (see page 9).
Remote control does not function.	<ul style="list-style-type: none"> • Replace the batteries.
The standby indicator  on the TV flashes red.	<ul style="list-style-type: none"> • Contact your nearest Sony service centre.

 In case of problems, have your TV serviced by qualified personnel. Never open the casing yourself.

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